

26
57 Pharmacy

American Perfumery AND AROMATICS



COSMETICS
TOILETRIES
SOAP

•
FLAVORS
AEROSOLS

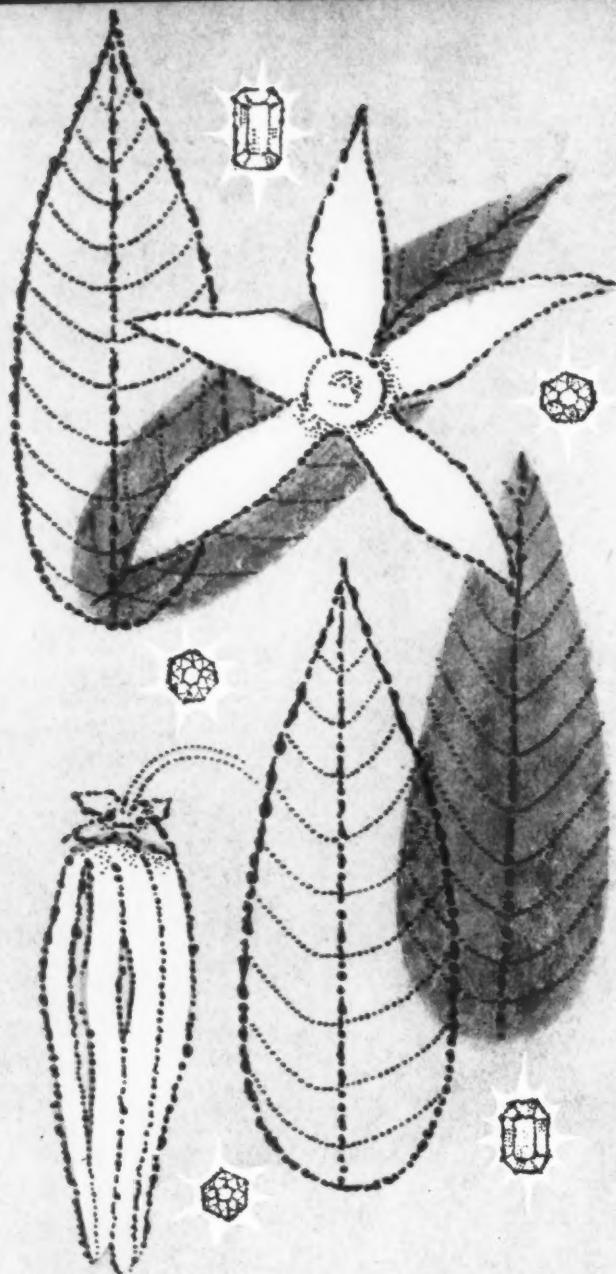
•
ESSENTIAL OILS

DECEMBER 1957

THE MAGAZINE OF TASTE AND SCENT



New Cosmetic Contaminant . . . Page 29 • Chicken Flavor . . . Page 55



UNGERER & CO.
PARIS

Fragrances skillfully created by Ungerer are superlative too!

For over 60 years they have been winning widespread
recognition and high praise for character and originality.
Let Ungerer help make yours the "product of products."



Ungerer, Vidal-Charvet
Paris, France

HOME OFFICE: 161 Avenue of the Americas, New York 13, N.Y.
plant and laboratories Totowa, N.J.

CHICAGO • BOSTON • PHILADELPHIA • ST. LOUIS • LOS ANGELES • ATLANTA



BEN SOMOROFF

Give YOUR PRODUCT the look of elegance
with *Lambert* engraving

There is no substitute for engraving and engine turning
when you wish to add a look of elegance to your product.

But elegance and high cost are *not* synonymous with Lambert engine turning
... for here in Attleboro we have coupled the art of
single tool craftsmanship with our exclusive *multitool* process,
to give you *quality in quantity*.

*Quality-in-Quantity
engine turning
makes elegance practical*

If you would like us
to ornament a sample
— to demonstrate how
Lambert engine turning can make
your product elegant in all but cost
— please write enclosing several shells.
There is no cost or obligation.

Lambert Engraving Company,
Attleboro, Massachusetts.



AMERICAN DISTILLED OILS...

Produced at our
Patchogue, L. I.,
N. Y. Factory



BALSAM PERU
CASCARILLA
CELERY
CITRONELLOL
CLOVE

GERANIOL
NUTMEG
OLIBANUM
OPONONAX

ORRIS LIQUID, CONC.
PATCHOULY
PIMENTO
SANDALWOOD
STYRAX

also LINALOOL • CITRAL • EUGENOL • RHODINOL



OLIBANUM ORRIS BALSAM PERU
LABDANUM BENZOIN BALSAM TOLU
OPONONAX STYRAX TONKA

ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME MATERIALS • COLORS

OFFERING ROSE ABSOLUTE

OVER 72 YEARS OF CONTINUOUS QUALITY SERVICE—
suppliers & manufacturers of—
Essential Oils • Aromatic Materials • Flavors



GEORGE LUEDERS & CO.

Established 1885

427 WASHINGTON ST., NEW YORK 13, N. Y.

CHICAGO • CAMDEN, N. J. • SAN FRANCISCO • MONTREAL
WAUKESHA, WIS. • TORONTO • SHREVEPORT, LA.

contents:

RESEARCH

- Paecilomyces *Maison G. deNavarre, M.S.* 29
A new contaminant in cosmetics
 Germicidal Detergent Compositions Containing "Tamed" Iodine 37
Iodophors as sanitizers, effects of iodine on hair, etc.

PRODUCTION

- Preparation of Aromatic Aldehydes—IX *Kurt Kalka, Ph.D.* 39
Benzaldehydes from aromatic methyl groups

FLAVOR SECTION

- The Chicken Flavor *Morris B. Jacobs, Ph.D.* 55
Carbonyl compounds in volatile portion of chicken flavor
 Biology of the Hair Follicle and Growth of Hair 42
Abstract of papers presented at International Conference on Hair

MANAGEMENT

- Perfumery Aromatic Industry in the U. S.—II *Paul Z. Bedoukian, Ph.D.* 31
Men and factors which contributed to growth of the industry
 Test Your Tax I.Q. 36, 72
Questions and answers to help in computing taxes

DEPARTMENTS

News	9, 77
Aerosol Notes	<i>Dr. Winston Reed</i> 66
Desiderata	<i>Maison G. DeNavarre</i> 25
Questions and Answers	15
Packaging and Promotion	60
Aeroscripts	<i>Jack Pickthall</i> 50
New Products and Ideas	62
Market Reports	89
Index to Advertisers	92



COVER: The church of Annunciation in Nazareth, Israel, one of the most Holy Christian shrines in the world. On this site Angel Gabriel appeared before Mary to announce the Birth of Christ. Courtesy of the Israel Gov't Tourist Office.

VOL. 70, NO. 6

DECEMBER, 1957

American Perfumer AND AROMATICS



J. H. MOORE, Jr.
President

M. G. DE NAVARRE
Technical Editor

M. B. JACOBS
Flavor Editor

WM. LAMBERT
Editor

JOHN H. MULLER
Vice President and
Business Manager

WALTER M. BONE
Assistant Editor

A. van der SHAW
Art Director

WINSTON H. REED
Aerosol Editor

IRVING PINES
Circulation Director

MARY HARRIS
Advertising Production Mgr.

LOS ANGELES
McDonald - Thompson, Richard
Eubanks, 3727 W. Sixth Street,
Los Angeles 5, Calif. Dunkirk
7-5391

CHICAGO
868 Peoples Gas Building, 122
So. Michigan Ave., Chicago 3,
Ill.

EDITORIAL AND
EXECUTIVE OFFICES
48 W. 38th St., New York 18,
N. Y. Longacre 5-3320

SAN FRANCISCO
McDonald-Thompson, Morton Mc-
Donald, 625 Market Street, San
Francisco 5, Calif. Yukon
6-0647

PUBLISHED MONTHLY by Moore Publishing Company, Inc. Publication office: Emmett St., Bristol, Conn., U.S.A. Editorial and Executive offices: 18 W. 38th St., New York 18, N.Y. J. H. Moore, Chairman of the Board; J. H. Moore, Jr., President; Lucian Neff, Vice President; Harold W. Springborn, Vice President; G. R. Brennan, Secretary, Subscription Rates: U.S.A., Possessions and Canada, \$5 one year; 50¢ per copy. Foreign, \$15 one year. Entered as second class matter, January 12, 1950, at the Post Office at Bristol, Conn., under act of March 3, 1879. Moore Publishing Co., Inc., is publisher also of Advertising Agency Magazine, American Printer & Lithographer, Gas Age, Gas Appliance Merchandising, Industrial Gas, LP-Gas and Brown's Directory of American Gas Companies. Address all correspondence to editorial and executive offices.

(Cable Address: Robinpub, N. Y. Volume 70, No. 6, Copyright 1957, Moore Publishing Co., Inc.)

specialized for your cosmetics...



van dyk's
SURFACTANTS

CERASYNTS
EMULSYNTS
ABSORPTION BASES
FOAMOLE



VAN DYK

& COMPANY, INC.
BELLEVILLE, NEW JERSEY

NEW YORK

CHICAGO

LOS ANGELES

TORONTO

To give that dry powdery effect

Osmodor Poudréal

A new tenacious base
of great fixing power
and originality

Versatile - Distinctive

Write on your firm's letterhead
for samples and prices.

Schimmel & Co., Inc.

601 West 26th Street
New York 1, New York



Precisely Your Formula



THE ESSENCE OF QUALITY is intrinsic in every service when you entrust your Private Brands of cosmetics to Avon. Using precisely your formula, or developing one that is exclusively yours, our chemists deliver to you a product that meets the Avon standards of quality, a tradition for over 70 years.

Your Private Brands of cosmetics and toiletries have the advantage of uniform and simultaneous production near your best markets... East, Middle West or Canada... when you entrust them to Avon. Call or write Avon for complete information concerning the production of your Private Brands.

AVON PRODUCTS INC.

PRIVATE BRAND DIVISION • 30 ROCKEFELLER PLAZA, NEW YORK

STRATEGICALLY LOCATED LABORATORIES IN SUFFERN, NEW YORK • MORTON GROVE, ILLINOIS • PASADENA, CALIFORNIA • AND MONTREAL, CANADA

the new '**ROCHE**' Aromatics offer the perfume designer

and manufacturer :



- previously unattainable stability in quality, supply, and price
- uniformity of raw materials never before achieved
- unexplored possibilities for creation of new interesting fragrances
- opportunity for long-range planning and purchasing

now available



Continuous olfactory control.

LINALOOL 'Roche'

A purer material than any previously offered to the industry. Free from the impurities present in the linalool from natural sources. Contains no other alcohols or terpenes. Olfactorily pure and floral in character. No residual 'after odor.' Unusually stable in soap.

LINALYL ACETATE 'Roche'

A very pure linalyl acetate containing no other esters and no terpenes. The Roche special process also precludes the formation of any other alcohols during the esterification process. Olfactorily pure and clean in odor. No residual 'after odor.' Unusually stable in soap.

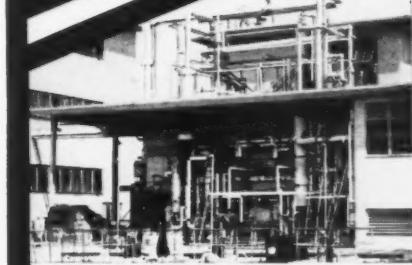
GERANYL ACETONE 'Roche'

A completely new synthetic aromatic. Possesses a soft green odor with a rose note. A good base for synthetic lavender, geranium and rose bouquet. Stable in soap.

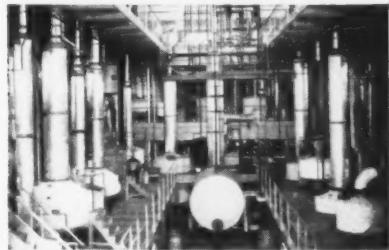
NEROLIDOL 'Roche'

Pure nerolidol. Light balsamic odor. Excellent fixative. Blends well with any perfume compound.

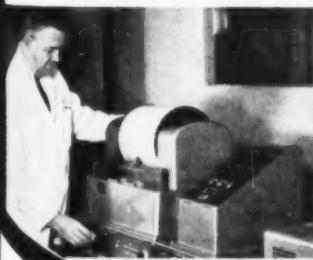
Detailed information on each product will be furnished on request.



Part of the specialized manufacturing facilities for maintaining uniformity of 'Roche' Aromatics.



Uniformity assured by controlled production.



Constant control of uniformity.



AROMATICS DIVISION

HOFFMANN-LA ROCHE INC

New York City: Oxford 5-1400

**'Roche' Aromatics
are available through
principal essential oil distributors**

• Roche Park • Nutley 10 • New Jersey • NUTley 2-5000

*The bright light of science is focusing on effective ways to use
bacitracin, polymyxin and neomycin in newer and better preparations
for the treatment of skin, eye, ear, nose and throat infections*



**Let PFIZER research
help guide your development of
TOPICAL ANTIBIOTIC PRODUCTS**

Bacitracin, Polymyxin, Neomycin. These three Pfizer Antibiotics are ideally suited for your topical products because:

1. They are not absorbed through the skin.
2. They have a low allergenic index and a low sensitizing potential.
3. They are not prone to induce development of resistant bacterial strains.
4. They are rarely used systemically.

In addition, these other Pfizer anti-

microbial agents are offered—penicillin, streptomycin and dihydrostreptomycin. Pfizer now is offering a new form of potassium penicillin G USP; a convenient, non-dusting granular form with superior tabletting properties.

Pfizer, the world's largest producer of antibiotics, also offers you the newest application data available on these antibiotics.

Call your Pfizer salesman. The nationwide network of Pfizer warehouses can supply you in a hurry from the most extensive line of quality-controlled antibiotics on the market.

**Manufacturing Chemists
for Over 100 Years**

Pfizer

**CHAS. PFIZER & CO., INC.
Chemical Sales Division
630 Flushing Ave., Brooklyn, N.Y.**
Branch Offices:
Chicago, Ill.; San Francisco, Calif.
Vernon, Calif.
Atlanta, Ga.; Dallas, Texas



MINUTE NEWS . . .

Proceedings on Fragrance Symposium Now Available

New Officers of Society of Cosmetic Chemists

Cosmetic Excise Taxes for Fiscal Year of 1957

Faberge Gets Judgement Against Countess Maritza

Graduate Course in Food Engineering at C. C. N. Y.

New York Chapter S. C. C. Installs New Officers

Ryland-Johnson Co. Inc. Succeeds H. C. Ryland Inc.

Use of Chromatographic Analysis for Perfumers

Proceedings of the third open symposium on fragrance which was held earlier this year by the American Society of Perfumers have been published. Copies are available at one dollar each from the secretary, Dr. Oliver L. Marton, Box 229, Clifton, N. J.

The Society of Cosmetic Chemists has elected the following officers for the coming year: President-elect, Savery F. Coneybear; Secretary, Robert A. Kramer; Treasurer, Dr. Walter A. Taylor; and directors: Miss Sophie L. Plechner and Dr. Paul G. I. Lauffer.

Cosmetic excise tax collections for the fiscal year ended June 30, 1957 were \$92,868,000. In 1956 the total collections were \$83,776,000.

Countess Maritza Cosmetic Co. was permanently enjoined by the New York Supreme Court from using the unique container of Faberge Inc. comprising a cylindrical transparent container in sizes from 1 inch to 3 inches in diameter and 2.75 to 8.5 inches in height with a cap either transparent or opaque of the same diameter as the bottle or any other simulation or colorable imitation of any of Faberge's containers for perfumes or cologne and from using in connection with any such container or package the designation "New Quartette Set" or the word "Quartette" or any other simulation or colorable imitation of Faberge's trade mark for perfumes and colognes.

The courses which are being offered for graduate students in food technology, the fundamentals of food technology and confectionery technology at the College of the City of New York under Prof. Siegfried Lichtblau are being well attended. Among the guest speakers who have lectured or conducted seminars in these courses are Dr. Victor G. Fourman, president, Syntomatic Corp.; Dr. M. Sherman, chief chemist, Bonomo, Inc.; Charles A. Herrmann, chief, New York District, Food and Drug Administration; and Dr. Bernard Oser, director, Food and Drug Research Laboratories, Inc.

Newly elected officers for the New York Chapter of the Society of Cosmetic Chemists were installed at the November meeting of the Chapter which was also celebrated as President's night. The newly elected officers are: Chairman-elect, Theodore Ostrowski, chief chemist Germaine Monteil; Secretary, Miss Muriel Zeitlin, senior chemist, hair products, Revlon Inc.; and Treasurer, Vincent DeFeo, head of the aerosol testing laboratory, Dodge & Olcott Inc. The feature of the evening was the address of President Sabbat Strianse of the national Society who outlined the growth and importance of the national Society and pointed out in an address "Toward a United Nations of Cosmetic Chemists" the plans for a federation in several foreign countries with the established Society.

Ryland-Johnson Co. Inc. has succeeded to the business of H. C. Ryland Co. which was established by Harry C. Ryland in 1916 as dealers in essential oils and aromatic chemicals. Alfred J. Johnson, who has been associated with the H. C. Ryland Co. for over twenty years is president of the new corporation which will conduct the business in the Ryland building, 161 Water St., New York, N. Y. Mr. Ryland has retired.

The Use of Chromatographic Analysis was the subject of an interesting and informative illustrated lecture by Dr. Nathaniel Brenner of the Perkin-Elmer Corp. before a large and appreciative audience at the November meeting of the American Society of Perfumers. President Pierre Bouillette, of the Society presided with his characteristic good humor.

Robert Dowling Gives Common Sense Talk on Sputnik

Robert W. Dowling, president and director of the New York Board of Trade and chairman of ANTA (Agent for the President's Special International Program for Presentations) and a director or trustee of 15 important business firms held the attention of a large audience at the November luncheon meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade when he took as the subject of his talk "The Cow Jumped Over Sputnik." Mr. Dowling widely experienced in civic and business activities, who is an astute observer spent some time in Russia. His talk was loaded with common sense observations which registered well with the audience. The white population of Russia is about the same as that of the United States. Outside of that the population is made up largely of the descendants of Mongol tribes. Mr. Dowling explained the condition of the Russian people, which, compared with our standards of living, is deplorable and he also pointed out that the mass of Russians do not want war. All told he pointed the way towards peaceful relations between the Soviet Union and the United States.

Nominations for S. C. C. Special Award Sought

The Literature Review Committee of the Society of Cosmetic Chemists requests nominations for the Society's Special Award to be presented at the May meeting of the Society. The award of one thousand dollars is given to the author or authors of the report of basic research, published in the past two years which is judged to be of the most potential value to cosmetic technology. Experts in several different fields are serving on the Literature Review Committee. Nominations for the award accompanied by a reprint or photostat of the articles cited if possible, may be made by any member of the Society. The nominations must be received by January 6, 1958 to be considered. Nominations should be sent to Dr. L. D. Apperson, Colgate-Palmolive Co., 105 Hudson St., Jersey City, N. J.

British Toothpaste Manufacturers May Double Sales by Promotion

American toothpaste manufacturers are watching with interest the intensive advertising in Great Britain. The British dentifrice market is estimated to be around \$24,000,000 annually but it is believed that it offers scope for considerable expansion since on a per capita basis the market consumes only three tubes a year. In the United States the consumption of toothpaste is estimated to have increased 50% in a decade which is traced largely to heavy advertising. If the British can boost consumption to a proportionate rate to that in the United States their market will be doubled. Volume advertising has proved itself in breaking down British sales resistance most recently in the detergent market. Both of the leaders in the detergent field are also prominent in the toothpaste field: Unilever Ltd. and Thomas Hedley & Co. Ltd. the British subsidiary of the Procter & Gamble Co. From reports it is likely that about \$7,000,000 will be spent in Great Britain in all types of media for toothpaste promotion. Colgate-Palmolive Co. is using a temporary price reduction; Macleans is offering a bonus tube for children. Other methods include bargain packs, coupons, price concessions, premiums and competitions with prizes. The market leaders are Hedley, Unilever through its subsidiary D & W Gibbs Ltd. Pepsodent and the Beecham group with Macleans. Pepsodent has a blue toothpaste in its Sky brand and there is a pink tooth paste by Gordon Moore Ltd. One American innovation which has not yet been seen on the British market is the addition of fluoride to toothpaste.

Use of Metric System Approved by U. S. Alcohol Tax Unit

In reporting the use of distilled spirits by manufacturers of perfumes, flavoring extracts and other non-beverage products is now permitted under certain conditions by the Alcohol and Tobacco Tax Unit of the U. S. Internal Revenue Service. Revenue Ruling 57-369 just issued by the IRS states that manufacturers of non-beverage products using tax-paid distilled spirits with benefit of drawback of tax are authorized to express formulas on Form 1678, Formula and Process for Non-beverage Products, in units of the metric system, provided the following items are also expressed in the English system of weights and measures: (1) Distilled spirits on wine; (2) Alcoholic ingredients (intermediates or purchased); and (3) The yield of the product.

Dandruff Treatment Hair Tonic for Men Only Launched by Curtis

A new dandruff treatment hair tonic for men only which the company says stops dandruff while it grooms the hair has been launched by Helene Curtis Industries, Chicago.



*Let's look at your cosmetic aerosol
fragrance problem from every angle!*

In custom-creating a fragrance for your cosmetic aerosol, Givaudan examines your problem from *every angle*—perfume efficacy and consumer acceptability...types of propellents...pressure...solubility...compatibility...container material...cost and other factors.

Our staff is equipped with the skill, knowledge and specialized facilities to study such problems scientifically. Thus we can supply you with a fragrance that is not only technically correct from every viewpoint but uniquely and specifically *yours*. May we work for you—with you—to give your cosmetic aerosols exactly the right fragrance appeal?



GIVAUDAN

GIVAUDAN-DELAWANNA, INC.
330 West 42nd Street, New York 36, N. Y.



*Replica of perfume bottle
used in the year 1768*

SINCE 1768 the House of Chiris has dedicated itself to the Fifth Sense. In the development of Essential Oils, Floral Absolutes, Chemical Isolates, Synthetic Chemicals, and all those creations and specialties which combine industrial aromatics with natural products and produce fragrance, the House of Chiris has a cherished history. Today Chiris maintains laboratories headed by experienced chemists who have available to them not only the accumulated knowledge of generations of Chiris perfumers and chemists, but also the research facilities of five modern laboratories located in Grasse and Paris, London, Sao Paulo (Brazil), and New York City. Whether Essential Oils, Isolates, or combinations thereof, are used as fragrance constituents by the perfumery, soap, cosmetics or allied industries, we are happy to be consulted.

ANTOINE CHIRIS CO., INC.

220 East 23 Street, New York 10, N. Y.

GRASSE • PARIS • LONDON • SAO PAULO



Our Fragrance can add

An appealing fragrance has a strange compelling power. It motivates impulse buying

. . . ACTION! Its lasting qualities keep a subtle form of repetition continuing . . .

MORE ACTION! Its distinctive character provokes admiration for the creator's taste.

Our fragrance can add . . . reflection!
(just as surely as you can make history)

. . . maybe it's up to you to review your arithmetic.

SEND FOR SAMPLE \$4.50 . . . \$8.25 per lb.

Albert Verley & Company

1375 EAST LINDEN AVENUE, LINDEN, NEW JERSEY
1018 S. WABASH AVENUE, CHICAGO 5, ILLINOIS

21 EAST 40th STREET, NEW YORK 10, NEW YORK

MEFFORD CHEMICAL CO.
1026 SANTA FE AVE., LOS ANGELES 21, CALIF.



ALBERT VERLEY & COMPANY

Bouquets and Finished Compositions

Synthetic Flower Oils and Aromatic Bases

Synthetic Aromatic Products and Organic Isolates



FOR A BETTER PRODUCT

In the many uses for menthol—from cigarettes to toothpaste—for its cooling effect, its flavor, its odor—Shulton I-Menthol USP gives to products the unvarying performance customers demand. Shulton's rigid standards of manufacture insure a crystal-pure material completely free of by-odors.

Join the growing family of manufacturers of soaps, toiletries, flavors and pharmaceuticals who insist on Shulton I-Menthol USP to guarantee their own product

quality. I-Menthol USP is one of many chemicals developed by Shulton's top ranking teams of chemists and perfumers. Others include:

VANITROPE® • VANILLIN, U.S.P. • RHODINOL SHULTON
CITRONELLOL • HELIOTROPINE • LINALYL ACETATE • NUVAN®
BENZYL ACETATE • LIGNYL ACETATE • GERANIOL
ISOEUGENOL • METHYL ANTHRANILATE • NITRO MUSKS

... Market tested in successful products



SHULTON FINE CHEMICALS

DIVISION OF SHULTON, INC., 630 FIFTH AVE., NEW YORK 20, N.Y., CIRCLE 5-6263



QUESTIONS &



ANSWERS

1266: TRICHLOROCARBANILIDE

Q. Would you please advise the supplier of 3,4,4-trichlorocarbonilide which is used as a soap antiseptic. We would also appreciate any thoughts you have concerning methods, other than actual clinical trial, for testing the effectiveness of a medicated shampoo. C. E. F., Minnesota.

A. The trichlorocarbonilide is made by Monsanto Chemical Co., St. Louis, Mo. We know of no other way of finding out how good a soap antiseptic it is unless you try it out in some clinical trials. You can use the Price or the modified Cade technique for hand washing and make bacterial counts before and after use. The same would probably apply to medicated shampoo as well as clinical observation of the condition of the scalp.

1267: BUTYLATED HYDROXYANISOLE

Q. I would appreciate any information you can give me about butylated hydroxyanisole and myristic alcohol and their use in cosmetics. V. E. D., Rhode Island.

A. Butylated hydroxyanisole is an antioxidant usable in foods, drugs and cosmetics. Usually about 0.1 percent is sufficient to do the job. Myristic alcohol is not used too often in cosmetics as cetyl alcohol is preferred. Suppliers for each have been sent separately.

1268: FURFURLY MERCAPTAN

Q. We are attempting to formulate an industrial perfume containing coal tar, ammonium hydroxide and furfuryl mercaptan, emulsified with soap in water. When freshly made this material has just the odor we are after but in a few days the odor of the furfuryl mercaptan fades and will finally disappear. We have used both glass and polyethylene bottles with plastic stoppers and cannot seem to hold the odor. Can you suggest any fixative that might solve our problem? P. D. S., Indiana.

A. The problem with your furfuryl mercaptan product, we suspect, is one where the mercaptan is either inactivated by some of the other materials or it in itself reacts with some of the other ingredients resulting in a product that has far less odor than what you want. The only way we know of trying to find out just where the fault may be would be to make up this product but leave out one of the ingredients at a time until you find the one at fault. When you find this, see if you cannot replace it with something else.

1269: DANDRUFF REMOVER

Q. We manufacture a dandruff remover shampoo and are using 1½ oz. of lauryl isoquinolinium bromide per gallon. We find that on some cases of dandruff it does not remove all of it and on others it reappears again within a day or two. When we tried Selsun it worked much better on these cases. We know that Selsun must be sold on a doctor's prescription but we were told that there is a chemical in this that can be used without having it on a prescription. We would like to know if you can give us the name of this chemical and the amount to use. Or could you recommend a good chemical to use that will remove dandruff? F. B. F., Missouri.

A. It is obvious that you are unable to use selenium disulphide, the active material in Selsun, in your dandruff remover shampoo, because it is covered by patents assigned to Abbott and Co. Another material that has sulfur in it is Bithionol, sold by at least two suppliers. We understand that TMTD which is also a sulfur compound has been used in deodorant soaps; whether it has any usefulness in a dandruff shampoo, we cannot say. You might contact the supplier whose name goes to you by letter.

From time to time suggestions have been and will be made in this magazine with respect to processes, devices, materials, appliances, equipment and the like. It is not practicable for the writers and editors to have a patent search or examination made in connection with each such suggestion. Our readers are, therefore, requested and indeed urged to determine for themselves whether any patent or other right will be violated before acting on any such suggestion.

*Joyeux Noël
et
Bonne Année*

SYNAROME
CORPORATION of AMERICA



Telephone
GR. 7-6313

24 East 21st St.
New York 10, N. Y.

Division of
AMERICAN AROMATICS, INC.



1. Myvacet Distilled Acetylated Monoglycerides, Type 9-40

2. Myvacet Distilled Acetylated Monoglycerides, Type 5-00



3. Myverol Distilled Monoglycerides, Type 18-05 (Free-flowing beads)

These are keys to "newness" in cosmetics



4. Myverol Distilled Monoglycerides, Type 18-05

Monoglycerides are not new. "Glyceryl monostearate" has been used by cosmetic formulators for years in making water-in-oil emulsions.

But a monoglyceride that's over 90% monoester is something so different that it can give a new direction to your products. We make it by molecular distillation to produce a uniform, stable, bland emulsifier that's non-ionic, neutral, and contains no residual soaps or catalysts—meets N.F. standards, of course. We call it *Myverol® Distilled Monoglycerides*. Try it in creams, lotions, lipsticks, ointments and other products based on water-in-oil emulsions. Its very purity is what gives it a unique behavior.

We make *Myverol Distilled Monoglycerides* in a number of types that are being used in cosmetics. Often, combinations of types can give you close control of viscosity and consistency.

Now *Myvacet® Distilled Acetylated Monoglycerides*—there is an entirely new type of ingredient for cosmetics. It's strangely non-greasy, not an emulsifier, but easily emulsified. *Type 9-40* is completely miscible with castor oil and with alcohol-water mixtures containing as much as 20% water. It does what isopropyl myristate and isopropyl palmitate do in many preparations but without contributing greasiness. *Type 5-00* is a highly flexible, easily emulsified solid.

The way to find out what these materials can do for your products is to try them. The way to try them is to write us for samples. *Distillation Products Industries*, Rochester 3, N.Y. Sales offices: New York, Chicago, and Memphis • Gillies, Inc., Los Angeles, Portland, and San Francisco • Charles Albert Smith Limited, Montreal and Toronto.

*distillers of
monoglycerides made from
natural fats and oils*



Also... vitamins A and E...
some 3500 Eastman Organic Chemicals
for science and industry

Distillation Products Industries is a division of **Eastman Kodak Company**



**Supporting their confidence
in your product . . .**



BASIC ANTI-PERSPIRANT INGREDIENTS

Safe, effective, easily incorporated types—for every product variety

**FOR CREAMS, LOTIONS,
POWDERS AND SPRAYS:**
Chlorhydrol

(aluminum chlorhydroxide complex)

Available in 5 forms . . . granular, fine, medium, impalpable, 50% w/w solution.

FOR GELS
Chlorhydrol S-5

(aluminum chlorhydroxide complex—modified)

In solid form for alcohol type . . . grease and gum free gels.

FOR STICKS
Chloracel

(sodium aluminum chlorhydroxy lactate complex)

Available as a 40% w/w solution for use in making cologne-type sticks. Compatible with soaps.

**REHEIS ANTI-PERSPIRANT
CHEMICALS OFFER ALL
THESE ADVANTAGES**

- effective anti-perspirant action
- fine deodorant qualities
- non-destructive to fabrics
- non-irritating to skin
- no buffering required

Write for free data and samples



REHEIS COMPANY, INC.
Manufacturers of Fine Chemicals
BERKELEY HEIGHTS • NEW JERSEY

© 3952



In

van Ameringen-Haebler, Inc.

521

van Am

Skillful Hands

● A successful fragrance is the result of a composite of many skills, technical, creative and the indefinable skills resulting from years of experience and tested judgment.

When you select your next fragrance, let van Ameringen-Haebler serve your needs.

Every aromatic material used to produce a VAH perfume oil, must meet rigid standards of acceptance.

Here, the infra-red spectrogram of an aromatic chemical just produced, is being compared with the standard control graph by a skilled spectroscopist in the Control Laboratories at the VAH Union Beach Plant.



521 WEST 57th STREET • NEW YORK 19, NEW YORK

van Ameringen-Haebler, S.A.R.L., Courbevoie (Seine) France • van Ameringen-Haebler (Canada), Ltd., Toronto 1, Ontario, Canada

Plymouth

ESTABLISHED QUALITY
SPECIALTIES

Ozokerite Waxes Both White and Yellow Ozokerite in a variety of melting points are available. We believe oil retention properties to be better than any other similar products commercially available.

Ceresin Waxes Plymouth White Ceresin Waxes are a standard of quality for the formulation of the finest cold creams. These waxes are available in a range of melting points and degrees of absorbency.

Crystal "E" Oil This 70 Viscosity Technical White Oil (meeting U.S.P. Acid Test) is considered more advantageous for many cosmetic formulations than higher viscosity N.F. Oils.

Special Petrolatums If natural Petrolatums will not "do the job", Investigate our Special Petrolatums tailored to individual requirements.

Lanolin, U.S.P. and Cosmetic.
Petrolatum U.S.P., all grades.
Beeswax, White and Yellow U.S.P.
White Mineral Oil U.S.P. and N.F., all grades.

M. W. PARSONS-PLYMOUTH, Inc.

59 BEEKMAN STREET
NEW YORK, N. Y., U. S. A.

Telephone BEEKMAN 3-3162-3163-3164
Cable Address PARSOILS, NEW YORK



Rose-valley

offers you the famous
BULGARIAN OTTO OF ROSE
guaranteed pure and genuine
BULGARIAN ROSE CONCRETE
PEPPERMINT OIL "Bulgaro-Mitcham"
Lavender Oil Zdravetz Oil
Chamomile Oil Coriander Oil
Basil Oil Juniper Oil
Lavender Concrete
Commercial State Enterprise
CHIMIMPORT
Directorate "BULGARSKA ROSA"
Stefan Karadjia 2,
Sofia, Bulgaria
Commercial Delegates:
LONDON, PARIS, BERNE



•BULGARSKA ROSA•

Experience

AN INTEGRAL PART OF THE CONTAINER WHEN
MARYLAND GLASS TAKES OVER YOUR DESIGN PROBLEM

STOCK DESIGNS



A variety in
blue or flint
glass and a
complete range
of sizes is ready
for immediate
shipment.

When you drop a packaging problem in our lap, the end result is more than a glass container. It is an idea . . . born of restless imagination, shaped by skilled hands, backed by years of sound experience. Our creative staff gives you a selling package that packs well, ships well and pushes your product on the shelf. For a successful solution to your design problem, contact MARYLAND GLASS CORP., 2147-53 Wicomico St., Baltimore 30, Md.

PACK TO ATTRACT IN

Maryland Glass

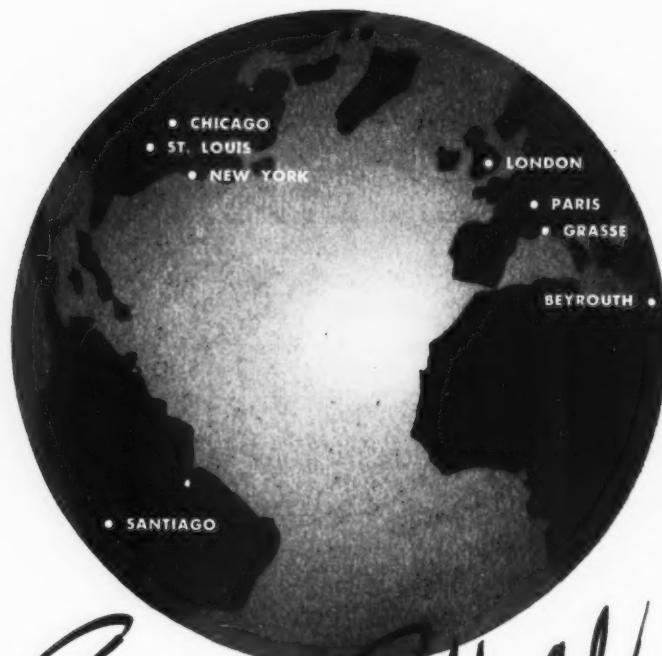
BLUE OR FLINT
JARS AND BOTTLES



LAUTIER FILS

"A Standard of Quality Since 1795"

GRASSE, FRANCE



Around the World

Uniform Quality Merchandise Shipped From
any of Our Many Branches and Factories

Essential Oils

Natural Flower Absolutes

Concentrated Natural Fixatives

Synthetic Aromatics

LAUTIER FILS, INC.

321 Fifth Avenue, New York 16, N. Y.

GRASSE

PARIS

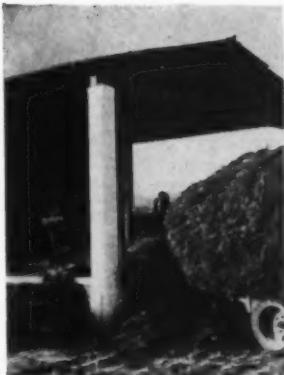
LONDON

BEYROUTH

ST. LOUIS

CHICAGO

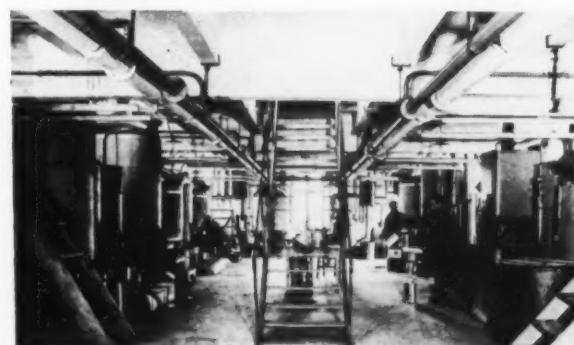
RIO DE JANEIRO



CAPACITY

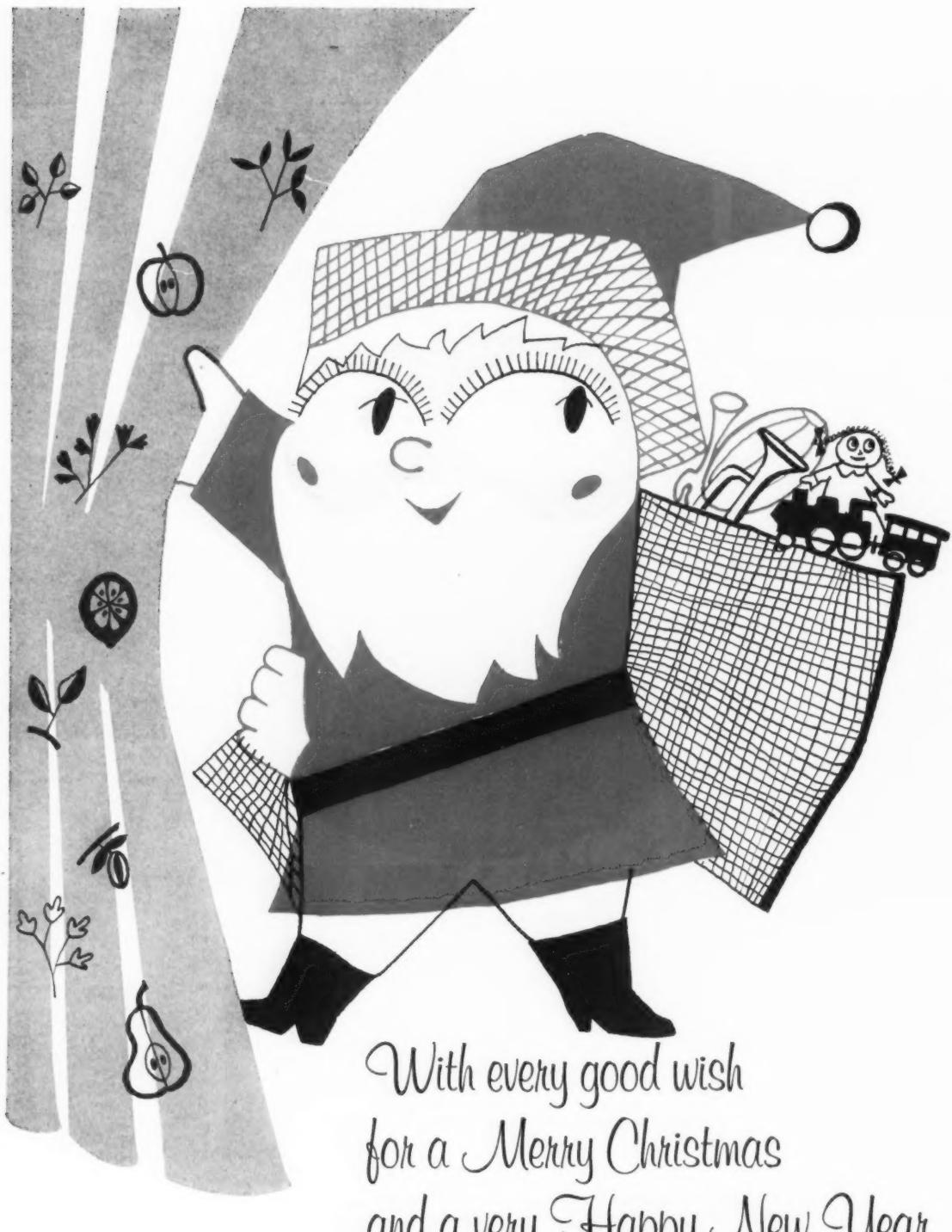


QUALITY



 for the finest in floral and essential oils

BERTRAND FRÈRES, INC.
443 FOURTH AVE. NEW YORK 16, N.Y.



With every good wish
for a Merry Christmas
and a very Happy New Year

Our 159th Year of Service

DODGE & OLcott, INC.

180 VARICK STREET • NEW YORK 14, N.Y.
Sales offices in Principal Cities

"Essentially for you"



Essential Oils
Aromatic Chemicals
Perfume Bases
Flavor Bases
Dry Soluble Seasonings

DESIDERATA

Maison G. deNavarre, F.A.I.C.



The French Viewpoint

At the recent Rassemblement International des sociétés de Cosmétologie, Sabetay discussed French contributions to the cosmetic industry.

It is usually difficult to translate one language into another so that the present interpretation of Sabetay's comments may not be what he thought he said.

However, after a number of French "firsts (?)", the speaker said something to the effect that the "French cosmetic industry doesn't consider costs" in developing cosmetic products and that higher priced products use the highest quality (priced) materials. Perhaps this is the situation in France. But in the States, U.S.P., T.G.A. or higher quality is the usual standard. No manufacturer would think of using technical beeswax, lanolin, glycerol monostearate or propylene glycol for example.

If Sabetay means that expensive cosmetics in France use "expensive" (unusual) ingredients, it doesn't mean that those ingredients are any better than many standard materials. One can cite these starting with squalene, oil of carob, silk powder, tissue extracts and so on. Maybe these ingredients are better. But scientific literature fails to show it. That they are more expensive goes without saying. But being expensive, doesn't make them better necessarily.

No one doubts the quality and greatness of French toiletries. All I know is, that you can see more and more U. S. Brands in France each year. Furthermore, I don't accept the inference that cosmetics other than French use inferior

quality or less useful materials, nor that the finished product made in France is any better perfumed.

Revolutionary Dentifrice

Way down in New Zealand, Irwin and Leaver are clinically testing out a dentifrice containing tetra-decylamine acetate to reduce dental caries—a film of the active material attaches itself to the teeth and protects them. A protective efficiency of 44 per cent is claimed.

Since New Zealand's habitants are said to have the highest incidence of dental caries anywhere, this should be a good test. As the patients will get this new material it will be in the form of a tooth paste containing a mild abrasive. Results should be interesting. The active material is commercially available in the U. S. A.

Perfume Sticks

These novelties come and go, although every now and then one lasts a while. One of the main problems with them is that due to their usual fatty base, they subdue the "punch" or "push" or effusiveness of the fragrance. Solid cologne overcame this to a large extent although the alkaline nature of the stick sometimes affected fragrance.

Now there are some new solvents such as "2,2,4" (hexylene glycol), polyglycols, THFA derivatives and polypropylene glycols to name a few. These can be solidified in a number of ways though sodium stearate shouldn't be overlooked. Maybe polyvalent stearates might work better. There are, too, the ethoxylated materials, all of which

are good solvents; some have a good molding consistency as is. Don't forget the possible usefulness of low molecular weight polyethylene resin as a stiffener for molded products.

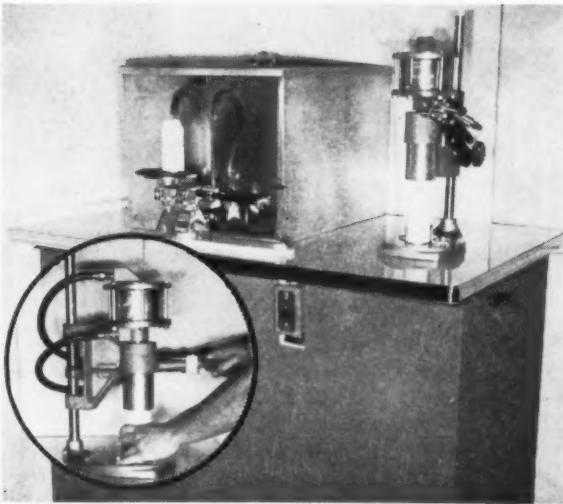
Notes

Well—it had to come . . . This department has regularly condemned widespread use of antibiotics for all and any ailments for two reasons—first the problem of allergy and sensitization of nonsensitive individuals—secondly, the development of resistant variants of bacteria—we are now told that penicillin is effective against only 20 per cent of *Staphylococcus aureus* and that this resistance has taken on "epidemic proportions." . . . Gatehouse, writing in the October 12 issue of CHEMISTRY AND INDUSTRY suggests coating rock salt plates used in infrared testing equipment, with polystyrene to prevent attacking of the plates by water-containing materials and others that fog the plates. . . . Eggs having come into play in shampoo in recent times, it is interesting to read a short article on eggs in our food, appearing in PRODUITS PHARMACEUTIQUES for October—the writer points out the shortcomings of eggs as a complete food. . . . Hoffmann-La Roche have British Patent No. 757,294 for the manufacture of a new solvent, the ethylene glycol ether of tetrahydrofurfuryl alcohol. . . . If what his reports say is true, Ernest Guenther had no picnic on his trip to Africa—there must be an easier way to check up on essential oil production . . . Baer and co-workers

Announcing...

THE FULFILLMENT OF A NEED FOR A

Small Production Line



AEROSOL 'COLD' FILLER

Capable of filling approximately 1,000 - 6 oz. cans per 8 hour day with one operator. Two different propellants can be filled and twenty cans and product can be precooled in the cold box.

Complete assembly includes an air crimper, air compressor, and laboratory scale all mounted on a formica table top 30" x 48".

The refrigeration unit is of the water cooled open type design, taking advantage of the inherently high efficiency of the water cooled design and the serviceability of the open unit. Water flow is fully automatic and stops when the unit is off.

This unit is Builders' answer to the long-felt need for such a small production line 'cold' filler.

EFFICIENT • EASY-TO-OPERATE & ECONOMICAL!

Complete technical data on request.

OTHER ITEMS—Complete Aerosol Lab setups including pressure filters, cappers, water baths, pressure testers, tanks & boxes.

BUILDERS SHEET METAL WORKS

INCORPORATED

108-110 Wooster St. • New York 12, N.Y.
Telephone Canal 6-5390-5398

find that squalene is acanthogenic. . . . It is interesting to see the caution, "Inflammable" appear on some nail polish remover after all these years. . . . Another case of a zirconium deodorant stick giving trouble in the underarm area. . . . A new musk chemical is making the rounds; smells good, too. . . . Have you seen the polyethylene containers that have the perfume incorporated right into the plastic?

International Cosmetology Prize

To reward the creative and selfless activities of cosmetologists and estheticians, Laseron & Sabetay of Carenne-Colombes, France, have established an international prize which will be awarded annually bearing the name of "Prix Giuliana Brambilla" in honor of one of the best estheticians in the world.

This prize was awarded in 1957 to Georges Dumont, secretary general of the International Committee of Aesthetics and Cosmetology (CIDESCO) and director of the School of Aesthetics and Biology of Brussels for his work in connection with international collaboration in the field of aesthetics and cosmetology.

Ability to Distinguish Odors

The ability to distinguish 15 different components in a given odor is held out as a goal to the graduate evening course in perfumery and essential oils conducted by Dr. Donald B. Denney of the School of Chemistry, New Jersey state university (Rutgers) which meets Wednesday evenings from 7 to 9:30 p. m. at 40 Rector St., Newark, N. J.

The perfume compounder, Dr. Denney holds, is a rare combination of chemist and artist. He must learn to recognise odors, how and why to create mixtures and above all must be able to distinguish the components of given odors. Since the formulas of many of the noted perfumes call for 30 to 40 items a discriminating and artistic nose is a must for the successful perfumer. A good perfumer can recognise at least 15 items in a given odor he maintains; and he hopes that most of his students will be able to achieve this skill by the end of their one year course in perfumery and essential oils.

The perfumery industries in New Jersey contributed the funds to finance the course.

Ready Now TO SOLVE ANY ODOR PROBLEM!

We've just completed major expansion of our Perfume, Flavor and Aromatic Chemicals Division and now have unequalled capacity for solving industrial odor problems.

Our recently enlarged facilities include an increased compounding staff, a more fully equipped laboratory, and a comprehensive new library of deodorants, reodorants and masking agents custom-engineered for specific end-uses.

We invite you to submit your household preparations, insecticides, aerosols and other products which require odor masking. We will be glad to recommend compatible formulations suited to your individual needs. For prompt service address your inquiry to the Industrial Odor-mask Laboratory.

PENICK

Perfume, Flavor and Aromatic Chemicals Division

S. B. PENICK & COMPANY 50 CHURCH ST., NEW YORK 8 • 735 W. DIVISION ST., CHICAGO 10



PIERRE CHAUVENT & CIE

USINES DE SEILLANS

SEILLANS (VAR.)

FONDEES EN

1883



DE TOUTES LES FLEURS LES PLUS FINES ESSENCES

TOUTES MATIERES PREMIERES AROMATIQUES NATURELLES

Polarome Inc.

73 SULLIVAN STREET • NEW YORK 12, N.Y.

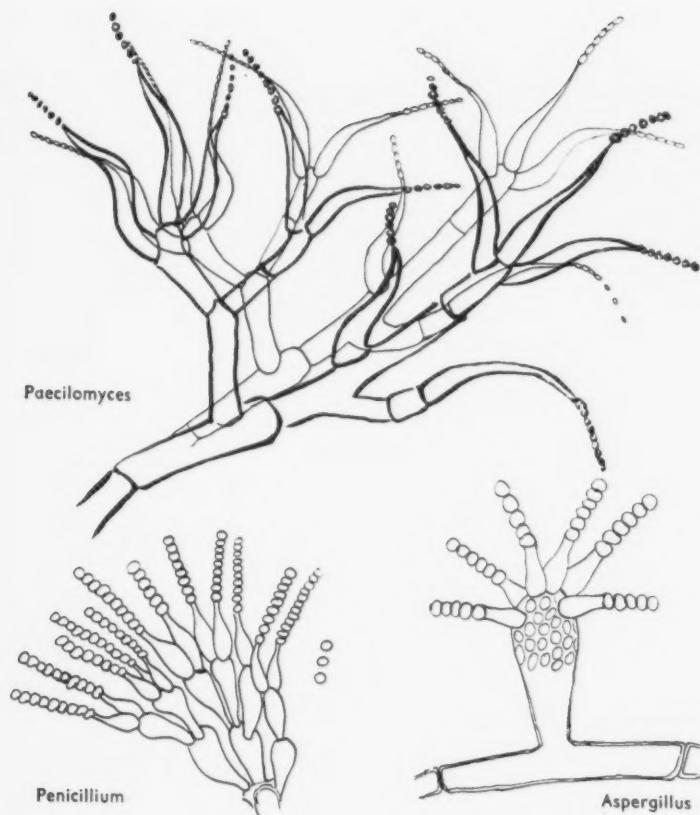
Tel. WOrth 6-3077

Cable: POLARINT

A NEW
CONTAMINANT
OF COSMETIC
PREPARATIONS

Paecilomyces

By M. G. DE NAVARRE
and HAROLD E. BAILEY



Scientific literature abounds with data on the organisms that cause spoilage. In cosmetics and related pharmaceuticals the following have been reported as product contaminants:

MOLDS	YEASTS	BACTERIA
Penicillium	Torula	<i>B. subtilis</i>
Rhizopus	Monilia	<i>E. coli</i>
Aspergillus	Saccharomyces	<i>B. mycoides</i> <i>Pseudomonas</i> , two types <i>Sarcina lutea</i> <i>Proteus vulgaris</i> , both types <i>Staphylococcus</i>

In 1946 Holt and Carroll reported on the occurrence of a fungus of the *Alternaria* type in closures, which eventually found its way into cosmetic emulsions.

A variety of *Syncephalastrum* has been reported found in raw materials imported from foreign countries, particularly the tropics. In appearance it resembles *Aspergillus*.

Absidia has been found in fat and oil casks. It somewhat resembles *Rhizopus*.

The air is continually changing in its microbial spectrum due to change of seasons with their concurrent decompositions of leaves, grasses, fruit and various waste, together with man's direct contamination of air and everything around him.

In studying a problem resulting from the inactivation of preservatives in nonionic emulsion, cultures taken from spoiled samples showed a regular variety of contaminants, namely a rod-shaped bacterium, a yeast and a brown-gray-almost green, powdery mold.

It was soon found that the contaminants came from the cap liner from which they were brought into contact with the cosmetic emulsion during use, then slowly proceeded to multiply. The bacterium belonged to the family *Bacillus* and the yeast to the *Monilia*. However, the mold was impossible to characterize exactly.

It had some of the appearance of a *Penicillium*, perhaps even a variety of *Aspergillus*. The branched conidial structures superficially resemble those found in *Penicillium*.

Cultures were grown on Sabouraud Dextrose agar at pH 5.6. In due course the mold was identified as a *Paecilomyces varioti* by the Northern Utilization Research Branch of the United States Department of Agriculture.

Bainier in 1907 has classified the *Paecilomyces* and gives the following description as quoted by Roper and Thom in their book, "A Manual of the Penicillia."

"Genus related to *Penicillium* and *Aspergillus*, distinguished by Sterigmata short-tubular or more or less enlarged, tapering into long conidium-bearing tubes mostly curved or bent slightly away from the axes of the main sterigmate cells; sterigmate variably arranged, partly in verticils and branching systems suggesting *Penicillium*, partly irregularly arranged upon short branchlets, partly arising singly along the fertile hyphae; conidia in chains, elliptical, never green."

The preceding drawings show the comparison between a *Paecilomyces*, *Penicillium* and *Aspergillus*.

OCCURRENCE

The organism is found in nature in human feces, hen's egg, licorice root, soy products of China, Ohio cabbage waste, military equipment, rotting cellar boards, Australia hard wood timber, oak timber during kiln drying and in England in the preservation of fruit.

The spores of *Paecilomyces* are fairly resistant, which may account for their presence in closure liners the material of which is subjected to heat and usually a chlorine treatment as well. The organism was able to propagate on a nonionic emulsion which contained 1:750 of methyl *p*-hydroxybenzoate as preservative. So, it was added to the group being tested to determine the interference of nonionic emulsifiers with preservatives, originally suggested by Bolle and Mirimanoff in 1950 when this work was first started.

PROCEDURE

Sabouraud dextrose agar containing 2 per cent nonionic or test material along with the preservative was inoculated with ten day old cultures grown on solid Sabouraud media. Results were noted daily at first, then weekly.

Sorbic and benzoic acids, methyl and other *p*-hydroxybenzoates and dehydroacetic acid were the preservatives tested with varying concentrations of the following nonionic materials: Spans 20, 40, 80; Tween 40; Myrj 89; Emulphor ON 870; G-3694 and polyethylene glycol 4000; controls of glycerin, propylene glycol and polyethylene glycol 400. Results are summarized in Tables I, II and III, using the most common cosmetic preservative, methyl *p*-hydroxybenzoate.

It has been thought by some workers that traces of free oleic acid in the monionics Span 80 and Tween 80 might act as some kind of metabolic stimulators to the organisms. To test this theory straight oleic acid (2 per cent) and a mixture of Span 20 and oleic acid were inoculated. In addition it was thought that oleyl alcohol because of its unsaturated bond would also have this effect. Results in Tables I and II indicate that neither oleyl alcohol or oleic acid had any significant effect. Mineral oil was used as a control.

Since the interfering nonionics were all ethylene oxide (ETO) adducts, it was decided to start with polyethylene glycol 400, using propylene glycol and glycerin as controls. Table III shows the results after eleven months.

However, when polyethylene glycol (PEG) 400 was esterified with stearic acid becoming a nonionic emulsifier, it showed interference. Indeed, a later experiment using *Aspergillus niger* in liquid Jaag media with other polyethylene glycol fatty acid esters, showed powerful interference of the nonionic emulsifier with the preservative.

When polyethylene glycol 1540 and 4000 were used, interference with certain acidic preservatives became readily manifested but not as easily with methyl *p*-hydroxybenzoate or dehydroacetic acid. So, it seems that the type of preservative, the number of ethylene oxide units condensed either with each other or reactable fatty materials, determines whether inactivation will or will not take place and at what rate.

SUMMARY

The literature of pharmaceutical or cosmetic spoilage does not mention *Paecilomyces*. This may be due to confusion resulting from the morphological similarity of *Paecilomyces* with both *Aspergillus* and *Penicillia*. This

report records for the first time the presence of *Paecilomyces varioti* as a contaminant of spoiled cosmetics. This mold grows on a solid Sabouraud medium containing methyl *p*-hydroxybenzoate 1:500, containing 2 per cent of several nonionics.

TABLE I
Results With Various Nonionics (2%) With Methyl *p*-Hydroxybenzoate 1:500 After Seven Months

	1.	2.	3.	4.	5.	6.	7.*	8.	9.	10.	11.
Penicillium	—	—	—	—	—	—	—	—	—	+	—
Monilia	—	—	—	—	—	—	—	—	+	+	—
Oidium	—	—	—	—	—	+	—	+	+	+	—
Monilia Sp.	—	+	—	—	—	—	—	—	+	—	+
Paecilomyces	—	—	—	—	+	+	—	+	+	+	+

KEY

- Control, No Nonionic
 - Tween 40
 - Span 20
 - Span 40
 - Span 80
 - Span 60 and Tween 40 Mixture
 - Span 20 and Oleic Acid
 - G-3694 (ethoxylated stearyl alcohol [4 ETO])
 - PEG 400 Monostearate
 - Emulphor ON870
 - Myrj 59
- * After Three Months

TABLE II
Results After Eleven Months With Cosmetic Materials (2%) With Methyl *p*-Hydroxybenzoate 1:500

	1.	2.	3.	4.	5.	6.	7.	8.	9.
Penicillium	—	—	—	—	—	—	+	—	+
Monilia	—	—	—	—	—	—	—	—	+
Oidium	—	—	—	—	—	—	—	—	+
Monilia Sp.	—	—	—	—	—	—	—	—	+
Paecilomyces	—	—	—	—	—	—	—	—	+

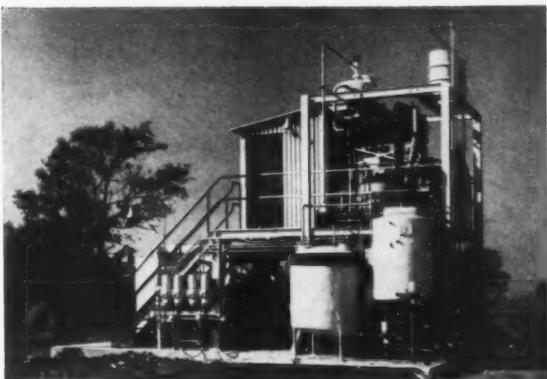
KEY

- Cetyl Alcohol
- Mineral Oil
- Glyceryl Monostearate S.E.
- Sodium Stearate
- Stearic Acid
- Oleyl Alcohol
- Oleic Acid
- TEA Mineral Oil Emulsion
- Control, No Preservative

TABLE III
Polyol (2%) Control With Methyl *p*-Hydroxybenzoate 1:500 After Eleven Months

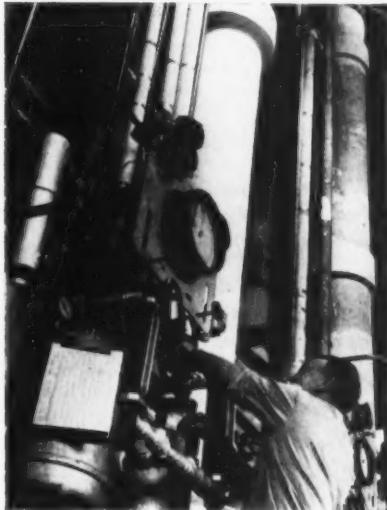
	Propylene Glycol	Glycerin	PEG 400	PEG 4000
Penicillium	—	+	+	—
Monilia	—	—	—	+
Oidium	—	—	—	—
Monilia Sp.	—	—	—	—
Paecilomyces	—	—	—	—

Installation for production of carbinols by Grignard Reaction process. At the Union Beach plant of van Ameringen-Haebler, Inc.

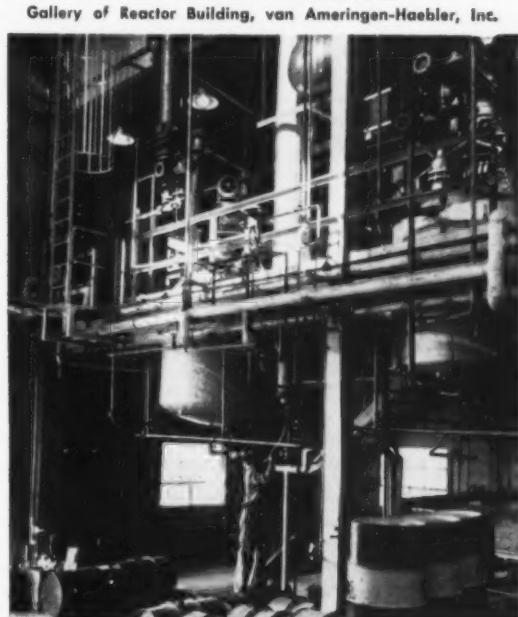


The Perfumery Aromatics Industry in the United States

continued



Fractional distillation, Givaudan-Delawanna, Inc.



Gallery of Reactor Building, van Ameringen-Haebler, Inc.



By PAUL Z. BEDOUKIAN, Ph.D.

Consulting Chemist, Author of
"PERFUMERY SYNTHETICS AND ISOLATES"

CONDITIONS AT THE OUTBREAK OF WORLD WAR I

During the period of 1912-1915, Van Dyk was advertising in the American Perfumer the sale of phenyl ethyl alcohol at \$30.00 a pound, and of dextro and levo citronellol at \$40.00 to \$45.00 a pound. Several new laboratories attempted to enter the synthetic aromatics field. Dr. Rothgiessens Chemical Laboratories made rhodinol from geranium oil, linalyl acetate 90 per cent, etc. Various terpene alcohols and their esters were prepared and placed on the market by Plymouth Organic Laboratories in New York. However, most of the aromatics mentioned above, with the exception of vanillin, coumarin and the ionones, were manufactured in relatively small amounts, either in glassware or on pilot plant scale. The really commercial scale manufacturing which later developed into the perfume aromatics industry in the United States did not begin until after the outbreak of the first World War.

In 1914, Dr. Martin Szamatolski of the Standard Chemical Company was making substantial quantities of terpineol, along with benzyl alcohol, benzyl acetate and benzyl benzoate, cinnamic aldehyde and acetophenone. The A. Chiris Company which as a branch of the French house had established in America in 1898, built a plant in Delawanna in 1913 and by 1917 had incorporated the Standard Chemical Company into its structure. In 1919 the plant was producing the following aromatics in appreciable quantities: Amyl salicylate, benzyl acetate, benzyl alcohol, cinnamic alcohol, diacetin, diethyl

Reprinted from the "Industries de la Parfumerie" Volume 12, No. 4—April 1957 and Volume 12, No. 5—May 1957

phthalate, diphenyloxide, eugenol, geraniol, hydroxycitronellal, ionone, iso-eugenol, linalool, methyl anthranilate, methyl cinnamate, methyl salicylate, rhodinol, terpineol, terpinyl acetate, and yara yara. By 1923, heliotropin, vanillin and coumarin were added to the list of their products.

During the early part of World War I, Dr. Martin H. Ittner of Colgate and Company was instrumental in the manufacture of hydroxycitronellal and ethyl citronellol, and developed a practical process for the commercial production of phenyl ethyl alcohol through the Grignard reaction. It appears that Colgate was importing from France an expensive perfume oil of secret composition, which possessed an odor that could not be duplicated by any of the known perfumery synthetics. Shortly after the outbreak of World War I, the company noticed that the imported perfume oil had a different character and lacked the desired note. It seemed reasonable that the missing link was a material which was apparently obtained from Germany and was therefore no longer available. The problem of finding the missing chemical was placed in the hands of Dr. E. Emmet Reid who not only found it to be hydroxycitronellal but also developed a successful method for its manufacture. The product was then manufactured by an American company although its identity was kept secret for some time thereafter.

In July, 1914, The Commonwealth Fruit Products Corporation was formed by F. E. Stockelbach and his associates for the purpose of processing fruit juices. When the war broke out, they switched to the manufacture of synthetic aromatics and started producing geraniol, rhodinol, ionones and methyl ionones. The latter was over \$100.00 a pound since methyl ethyl ketone was not available in those days. In 1915 they produced gamma undecalactone (peach aldehyde) for the first time in America. In 1916, the name of the company was changed to the Commonwealth Chemical Corporation, and they were producing benzyl alcohol and benzyl acetate, benzaldehyde and benzoic acid. They also carried out large scale chlorination of toluene for the manufacture of benzaldehyde and benzoic acid. After the war, the company produced mainly benzoates and coumarin and was eventually incorporated into Monsanto.

Compagnie Morana Inc., established in the United States in 1909, was active in the importation of perfumery compounds and specialties from Europe. With the outbreak of the war, this company took an interest in the manufacture of aromatic chemicals to meet the shortages and the rising prices of perfumery synthetics. By 1916 they were producing substantial quantities of geraniol, rhodinol, ionones, phenyl ethyl alcohol and methyl phenyl carbonyl acetate, the latter probably for the first time in America. The list of materials manufactured grew as time went on.

At the turn of the century, Harold H. Fries had established the Fries Brothers Company for the manufacture of organic chemicals. In 1918 a plant was built in Bloomfield, New Jersey for the purpose of manufacturing aromatic chemicals. They were apparently the first to manufacture ethyl vanillin, synthetic menthol, homomenthol, etc. in America.

Another company formed during the war years was Florasynth Laboratories by L. A. Rosett and C. L. Senior. In the next few years, the company undertook the manufacture of a number of synthetic aromatics such as phenylacetaldehyde, anisaldehyde, methyl anthranilate, etc.

By the end of World War I, most of the necessary aromatic chemicals were being manufactured in the United States and prices had become stabilized.

The following table gives an excellent picture of the materials available and their prices during this period:

	Feb. 1917	Aug. 1918	Aug. 1919	Feb. 1921
Amyl salicylate	\$ 3.00 lb.	\$ 3.00 lb.	\$ 2.50 lb.	\$ 1.75 lb.
Anethole	2.75	2.75	2.75	2.00
Anisic aldehyde	6.50	6.50	6.75	6.75
Benzaldehyde	5.00	4.25	1.75	1.20
Benzyl acetate	7.00	5.00	2.25	1.60
Benzyl alcohol	-	5.75	2.75	2.00
Benzyl benzoate	10.00	10.00	3.25	3.00
Borneol	4.00	4.00	3.50	3.50
Bornyl acetate	4.50	5.50	5.50	5.50
Bromostyrol	-	-	10.00	8.25
Cinnamic acid	-	-	7.25	5.50
Cinnamic alcohol	-	-	45.00	30.00
Cinnamic aldehyde	3.50	4.00	5.50	5.00
Citral	\$ 3.25	\$ 3.75	\$ 4.25	\$ 5.25
Citronellol	16.00	24.00	17.00	15.00
Coumarin	20.00	34.00	7.00	5.25
Diphenyl methane	-	-	2.50	2.50
Diphenyl oxide	-	5.00	2.00	1.60
Ethyl cinnamate	-	-	10.00	8.00
Eucalyptol	1.35	1.45	1.30	1.20
Eugenol	3.50	5.00	4.00	4.00
Geraniol	4.50	5.00	3.25	3.00
Geranyl acetate	8.50	8.50	7.25	8.00
Heliotropin	5.00	5.00	4.25	3.50
Indole (1 oz.)	15.00	-	15.00	12.00
Iso eugenol	4.00	8.50	9.00	8.00
Linalool	6.50	6.50	7.50	7.00
Linalyl acetate	11.00	11.00	13.00	19.00
Methyl anthranilate	11.00	65.00	18.00	8.25
Methyl cinnamate	7.50	7.50	7.25	8.25
Methyl heptene carbonate	-	-	-	130.00
Methyl p-cresol	16.00	16.00	16.00	15.00
Methyl salicylate	.90	.90	.60	.50
Musk ambrette	-	90.00	90.00	45.00
Musk ketone	-	55.00	60.00	25.00
Musk xylene	12.50	28.00	13.00	6.00
Phenyl acetaldehyde	50.00	70.00	50.00	19.00
Phenyl ethyl alcohol	60.00	45.00	37.00	23.00
Phenyl acetic acid	-	-	24.00	6.50
Rhodinol	\$ 15.00	\$ -	\$ -	\$ 18.00
Scatole (1 oz.)	12.00	-	-	57.00
Terpineol	.50	1.00	1.00	.70
Terpinyl acetate	3.00	3.25	3.25	3.50
Thymol	17.00	-	6.00	1.00
Vanillin	9.50	14.00	11.00	12.80
Violet artificial	-	11.00	15.00	12.00

It can readily be seen from these data that shortly after the war a very large group of perfumery aromatics were made in America and sold at reasonable prices. The few remaining gaps were soon filled, with the result that the American perfume industry became practically independent of foreign sources.

THE POST WAR EXPANSION PERIOD

In 1924 the Givaudan organization acquired the plant of A. Chiris & Company in Delawanna and in addition to the materials manufactured by Chiris, began the production of a large number of new ones. These included aubepine, cinnamic alcohol synthetic, cinnamic aldehyde,

amyl cinnamic aldehyde, cuminic aldehyde, cyclamen aldehyde, the fatty aldehydes, the three artificial musks as well as the two new ones at a later date (moskene and musk tibetine), menthol, carvacrol, indole, phenyl ethyl alcohol, etc. By 1927 the price of musk zylene was \$2.50 a pound; of musk ketone \$8.50 a pound, and musk ambrette, \$6.50 a pound. The price of phenyl ethyl alcohol had dropped to less than \$5.00 a pound, although it was still made through the old Bouveault—Blanc sodium reduction process.

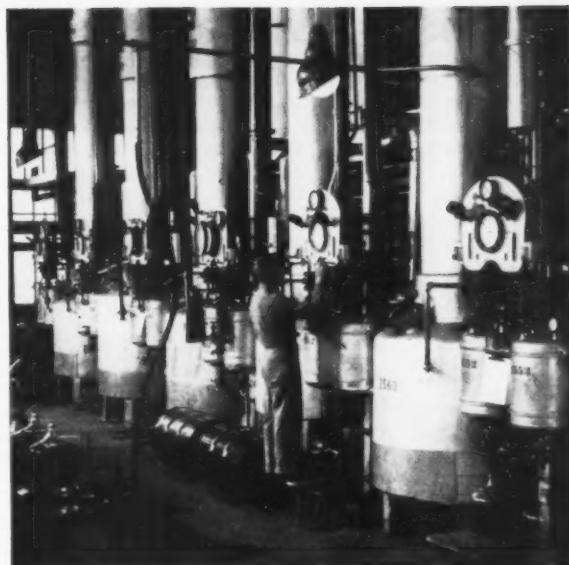
As the industry expanded, a number of new companies were formed which are in business to this day. In 1922, Dr. Joseph Felton established the Felton Chemical Company in Brooklyn and began producing a range of aromatics. It was one of the first companies to produce dimethyl anthranilate in this country. The two Fries brothers who had founded Fries & Fries in Cincinnati in 1919 for the manufacture of perfumery aromatics, certified colors and food specialties, increased their activities in the late twenties and undertook the production of large quantities of a wide range of perfumery synthetics. Other companies formed during this period include. The A. L. Van Ameringen Company, Polak's Fruital Works, Norda Essential Oil Company, Compagnie Parento, Inc., etc. Many of these essential oil companies, including Ungerer & Company, Geo. Lueders & Company, Magnus, Mabee & Reynard, W. J. Bush & Company, and others, were actively engaged in the manufacture of a range of isolates.

In addition to producing large quantities of widely used aromatics, some companies began the manufacture of the rarer aromatics on a limited scale. Thus, during the early twenties we find Florasynth Laboratories offering iso-butyl indole, tetrahydropyramethyl quinoline, p-cresyl phenyl acetate, dimethyl hydroquinone, etc. Practically all the known developments in Europe were being duplicated in the United States.

From the late twenties to the late thirties, the American aromatics industry experienced a phenomenal growth. The quantities of materials used by the soap, cosmetic and flavoring industries increased by leaps and bounds and as a result a number of large and well established chemical companies entered the field of aromatics. In general, they followed the policy of manufacturing a limited number of synthetics in large quantities, and in this manner were able to constantly lower the prices and improve the quality of their products. Among the giant chemical companies that showed interest in aromatics was E. I. du Pont de Nemours & Co. which created an aromatics division, and took over the activities of Rhodia which in turn had been part of Newport Industries. The Naugatuck Chemical Company, a subsidiary of U. S. Rubber, began the manufacture of a range of aromatics. Incidentally, both of these companies recently gave up their production of aromatics, DuPont's Aromatics Division being taken over by Rhodia, and Naugatuck's by Roubechez Inc. The names of Dow Chemical Company and of Verona, also stand out in the field of synthetic aromatics.

Even during the depression years, the industry kept on developing and increasing its volume and number of products. New and important manufacturers of aromatics, such as Maschmeijer Inc. and Trubek Laboratories came into being and made outstanding contributions.

By 1939 there was no longer any question of American dependence on European sources of aromatics. A fully grown and mature industry existed, capable of taking care of emergencies and meeting all requirements. Of course, as a result of wartime conditions and the absence of natural raw materials, some scarcities were inevitable and prices temporarily rose on many items.



Distillation units, Givaudan-Delawanna, Inc.

CONTRIBUTIONS OF THE AMERICAN AROMATICS INDUSTRY UP TO WORLD WAR II

Although the industry's main preoccupation between the two world wars was to establish itself and keep up with the ever increasing demand for aromatics by the soap, cosmetic and allied industries, it nevertheless made several notable contributions.

Of particular interest to those engaged in perfumery aromatics was Carother's discovery in the early thirties of a new and relatively simple method of forming macrocyclic compounds. The discovery of this reaction was the result of researches which eventually led to the development of the world famous nylon. In the course of his researches on large molecules, Carothers found that it was possible to depolymerize linear polyesters by heating them under vacuum in the presence of suitable catalysts. He was thus able to obtain cyclic monomers which had strong and pleasant musk odors. By heating the linear polyester of brassyllic acid and ethylene glycol, a cyclic ester was formed with a pleasant, powerful odor of musk. This product, under the name of astrotone, was first marketed in 1937 at a comparatively low price and was immediately successful. Since it was much lower in price than the macrocyclic lactones or ketones imported from Europe, it was used by the industry in substantial quantities. At a later date, Carother's depolymerization reaction was applied to the synthesis of ether lactones, but apparently this has not been exploited commercially.

Another American development in the field of macrocyclic compounds was the discovery of Stevens and Erickson in the early forties of the nature of components of the odorous glands of Louisiana muskrats. These glands were found to be rich in the macrocyclic alcohols normuscol and dihydrocivetol, and by oxidation of these alcohols the corresponding ketones were obtained which had powerful and pleasant musk odors. The product was placed on the market as Musk Zibata by Givaudan. The same company developed a new nitrated musk, musk tibetine (4,6-dinitro-2,3,5-trimethyl-tertiary-butyl-benzene) which is marketed to this day.

Vanillin is undoubtedly one of the most important aromatic products used by the perfume and flavor industries. It had been produced from guaiacol or eugenol

for almost sixty years. In 1936, a small plant in Rothschild, Wisconsin, began producing vanillin from lignin, a complex material found in the waste sulfite liquors of paper manufacturing plants. Full commercial scale production was begun in 1938. The method, which has since been greatly improved, was patented by Sanborn, Salvesen and Howard. At about the same time, a similar process was perfected in Canada and a plant of the Howard-Smith Paper Mills in Cornwall, Ontario, began producing vanillin from lignin under patents granted to Tomlinson. The production of vanillin from lignin had proven highly successful and efforts are being made to use low-priced crude vanillin as a raw material for other products.

RECENT AMERICAN CONTRIBUTIONS TO THE AROMATICS INDUSTRY

Shortly after World War II, Glidden & Company, a large producer of turpentine oil and its fractions began manufacturing small quantities of a product called Nopol. It was made by the interaction of formaldehyde and pinene. This primary alcohol in itself had a mild but pleasant odor. Its acetate was found to possess a more powerful odor reminiscent of a mixture of terpinyl acetate and linalyl acetate, but more lasting in character. Its low price and desirable odor characteristics have made it an important new aromatic and tonnage quantities are now being used by the soap as well as the perfume industry.

The Verona Chemical Company which had long been manufacturing phenyl ethyl alcohol, vanillin, ionones and cyclamen aldehyde, began the production of a large number of acetals which have proved to be very valuable because of their stability to alkali. They have successfully marketed the dimethyl, dibutyl, ethylene glycol acetals of phenyl acetaldehyde, hydratropic aldehyde, phenyl propyl aldehyde, amylocinnamic aldehyde and cyclamen aldehyde.

Polak's Fruital Works, manufacturers of fine aromatics since the outbreak of World War II, marketed in 1951 a new musk fixative, phantolide, which appears to be a non-nitrated product and hence totally different from the existing ones. Other unusual products manufactured by this company include dihydrojasmone, duodecalactone, etc.

Shortly after the war, the well-known house, Shulton, established a fine chemicals division for the purpose of manufacturing a number of aromatic chemicals. Of these, vanitrope (pure propenyl guaethol) and floralizer #12 (a stable benzenoid ether) are of recent development. This firm has also placed on the market a Rhodinol Shulton, which is a synthetic product prepared by means of a patented procedure. Its preparation is claimed to depend on the shifting of the double bond so that the final product is identical in all respects to the natural rhodinol obtained from geranium oil.

The Dow Chemical Company entered the aromatic field in 1916 by manufacturing methyl salicylate, and a few years after World War I began producing coumarin and methyl anthranilate in large quantities. The production of the last two items was the natural outcome of Dow being a very large producer of phenol; hence salicylic aldehyde to make coumarin, and anthranilic acid to make methyl anthranilate.

Dow Chemical made phenyl ethyl alcohol using the Grignard reaction. This also came about as a result of their natural desire to make use of magnesium which they were producing in large quantities. In 1922, Dow developed a process whereby chlorobenzene-magnesium-ethylene oxide was used to produce phenyl ethyl alcohol without recourse to ether. It was probably the first

commercial application of the Grignard reaction and remained so for many years.

Recently, Dow has been producing phenyl ethyl alcohol by hydrogenating styrene oxide, a raw material which they make in large quantities in their Texas plants.

They have marketed diphenyl oxide since the early thirties and a small part of their production is absorbed by the perfume industry.

In search of newer materials, Dow developed a range of products which are of interest both to the perfume and flavor industries. For example, palatone (maltol) and cyclotene (2-hydroxy-3-methyl-2-cyclopenten-1-one), obtained by the destructive distillation of hard woods, are being extensively used in perfumes and flavors. Iso-cycloclortal (an isomer of citral) and its condensation products with ketones, such as velvetine, etc., are also marketed by this company. Continuous research is being carried out by Dow in an effort to find newer aromatic bodies which could develop into aromatics of tonnage consumption. Incidentally, Dow is licensed by Glidden to produce nopol acetate and huge amounts of this material are now being prepared.

The A. L. Van Ameringen Company, Inc. formed in 1925, and Compagnie Morana, Inc. founded in 1909, combined in 1929 as the Van Ameringen-Haebler Corporation. The two companies had long been active in manufacturing aromatics and perfumery compounds. Van Ameringen was the first to prepare amyl cinnamic aldehyde on a large scale in the United States, in 1929. A few years later, in 1932, Van Ameringen-Haebler started producing phenyl ethyl alcohol using the Friedel-Crafts reaction. In all probability, it was the first application of this process in America for the manufacture of phenyl ethyl alcohol. At present, Van Ameringen-Haebler is spending substantial sums on research and as a result has been able to constantly develop new products and improve manufacturing methods. Many of the newly discovered aromatics are used in compounding, but a number of others are marketed as aromatic



General view of Distillation Building, van Ameringen-Haebler, Inc.

raw materials. Other items manufactured in large quantities include: hydratropic aldehyde-dimethyl acetal, hydratropic alcohol, p-isopropyl hydratropic aldehyde, o-methyl diphenyl ether, etc. Of the numerous rarer synthetics manufactured, one might mention cyclohexadecanolide, isobutyl quinoline, p-methyl dimethylbenzyl carbinol. Two products, geralox and geratin are composed primarily of synthetic geranyl acetate and linalyl acetate.

The Glidden Company which handles very large amounts of turpentine oil has been producing myrcene in considerable quantities and in an effort to find other markets for it is conducting extensive experiments to convert them into materials which may find usage in our industry. The hydration of myrcene is difficult and so far no simple method has been found to produce linalool from this unsaturated hydrocarbon. Should it be possible to hydrate myrcene and obtain linalool in good yields at reasonable cost, it may then prove practicable to establish a new aromatics industry based on linalool obtained from myrcene. At present, Glidden is producing in small lots a hydrated myrcene which contains about 60% alcohols, of which one third is linalool. The hydrated mixture is selling at a very low price and it will be interesting to watch its development.

Another development along similar lines is the synthesis of citral by Hoffman-La Roche Inc. This company is in the process of building a plant for the sole purpose of producing citral synthetically to be used in its Vitamin A production. The starting material is acetylene, which through a series of hydration-polymerization reactions gives dehydrolinalool and hence citral. It is the general opinion that synthetic citral will stabilize the price of lemongrass oil, but whether it will ever serve as a source

of perfumery aromatics remains to be seen. (Since this article was written, Hoffman-La Roche Inc. has begun marketing purely synthetic linalool, linalyl acetate, geranyl acetone and nerolidol). All this experimentation has been motivated by the desire to produce aromatics which can always be available at stable prices, and are independent of the vagaries of nature. In view of the ever increasing demands of American industry, for tonnage quantities of aromatics at low prices, research along these lines can be expected to continue.

In general, the greater part of the industry's effort is concentrated on producing larger quantities of better quality aromatics at the lowest possible cost, and admittedly, the competition among the giants is very keen. Some of the well-known materials such as phenyl ethyl alcohol, coumarin, vanillin, heliotropin, benzyl esters, etc., are used in very large amounts by other industries also.

In addition to materials produced in tonnage quantities, the research laboratories of aromatics houses are synthesizing hundreds of new chemicals each year and some of them go into specialties and finished compounds. It is no secret that every essential oil or aromatics concern has developed outstanding specialties which are based on its own discoveries of new chemicals possessing new and desirable odor characteristics.

The number of specialties made in the United States is so great that it would be unfair to pick out a few even for the purpose of discussion. Suffice it to say that most of the houses, both the American and the branches of European firms in the United States, have a full range of finished perfumes and specialties to cater to the various requirements of the truly huge American market.

To be concluded in January issue

Causes of Caries Intrigue Researchers

It has long been recognized that dental caries is of complex etiology. Congenital malocclusion, faulty nutrition, and bacterial action have received considerable attention at the hands of investigators and all seem to be involved in varying degree. Despite the hope held out for fluoridation of water supplies as a means of reducing if not conquering this widespread defect in our population, a hope that is being realized in many parts of the nation, scientists continue to show interest in ferreting out the basic causes of tooth decay. It is not at all certain that fluoride deficiency is the primary factor even in areas where fluoridation has proved beneficial.

A recent addition to the list of nutrients studied in this connection is vitamin B₆ (pyridoxine). Merck investigators have observed an increased incidence of dental abnormalities in monkeys, dogs, and hamsters receiving inadequate amounts of this vitamin. The dietary level of pyridoxine necessary to suppress dental caries in the hamster is appreciably higher than that needed to satisfy growth requirements. Whether the mechanism of this effect is mediated through alterations in oral bacterial types or population remains for future study.

The role of dietary minerals in tooth development and in caries resistance and susceptibility continues to intrigue students of the problem both here and abroad. Experiments in which the ash of mixed natural diets, or of specific foods like whole wheat, yeast, and cocoa, have been added to purified diets have emphasized the importance of inorganic nutrition at least at the devel-

opmental stage. Other investigations have been directed toward particular metallic ions including magnesium, lithium, cadmium, lead, and even vanadium, but these have yielded inconclusive results.

Long range studies over several generations in which control is maintained over all dietary components, organic and inorganic, macro and micro, are needed to cast more light on this confusing problem. Meanwhile it is regrettable that so many of our communities are being deprived of the established protective benefits of fluoridation for reasons reminiscent of those advanced years ago against compulsory vaccination and milk pasteurization.—Food & Drug Research of Food Research Laboratories.

Precious Minutes

It is sad but true that a salesman has precious little time, relatively, in the presence of the prospect where he is most effective. On an average, a salesman works 244 days, 8 hours a day (minimum!), or 1,952 hours a year. About half of this time (or more) is spent traveling, waiting, doing paper work. He winds up with, maybe 976 hours of effective selling time. If he has 500 accounts and sees them every three months, his average time per sales call is less than 30 minutes! Good advertising serves to make those precious minutes more productive—because it precedes a salesman on his calls, it has often already answered many time-consuming questions about a product or a company.—Tide.

Test Your Tax IQ

Test your knowledge of the federal income tax law on this quiz prepared by the American Institute of Certified Public Accountants in cooperation with the Internal Revenue Service. You will find the correct answers on page 72.

1. During the past year you spent approximately \$1,000 for built-in bookcases and wall-to-wall carpeting for your office. Since your lease has only four years to run, you may . . .
 - (a) Deduct the \$1,000 on your 1957 tax return
 - (b) Amortize the cost over the next four years
 - (c) Depreciate it over the life of the furnishings
2. When you were transferred to another city, your company gave you a sum of money toward the cost of moving you and your family. For tax purposes you should consider this money as . . .
 - (a) A gift that is not taxable
 - (b) Income that is subject to tax with a deduction for only your personal moving expenses
 - (c) Income that is subject to tax with a deduction for the cost of moving your entire family
3. You have invested in several blue-chip stocks. The dividends received from this investment are exempt up to . . .
 - (a) \$50 whether you or your wife owns the stock
 - (b) \$100 if the stock is held jointly by you and your wife
 - (c) \$100 regardless of who owns the stock, providing you file a joint return with your wife
4. You are not permitted to deduct as contributions your donations to which of the following organizations . . .
 - (a) Charitable societies
 - (b) Educational institutions
 - (c) Political parties
5. Your daughter, who was hospitalized for several weeks in the earlier part of 1957, was married in November. If she files a joint return with her husband, you may . . .
 - (a) Not claim her as a dependent but you may deduct her medical expenses
 - (b) Claim her as a dependent and deduct her medical expenses
 - (c) Not claim her as a dependent and you may not deduct her medical expenses
6. You filled very few inside straights during the past few months and lost approximately \$300 to the members of your Thursday night poker club. You should . . .
 - (a) Deduct the loss in computing adjusted gross income

- (b) Subtract the loss from adjusted gross income
 - (c) Give up poker and start watching television on Thursday nights
7. Last October your car skidded on a wet road and grazed a telephone pole. The damage was not covered by insurance and it cost you \$100 to have the car repaired. To claim a casualty deduction . . .
 - (a) You must have the damage repaired within 30 days of the accident
 - (b) You may simply deduct the amount of the repair bill
 - (c) You must prove that you were using the car in your work at the time of the accident
8. Which of the following may you not consider as a deductible business expense . . .
 - (a) A subscription to (insert the name of your trade publication)
 - (b) Commutation fees
 - (c) The cost of attending the (insert the name of a trade) convention
9. While playing hide-and-seek in your backyard, the neighbor's children trampled and killed several of your more expensive bushes. The cost of replacing this shrubbery . . .
 - (a) May be deducted if it does not exceed the original cost of the bushes
 - (b) May be deducted only if the parents of the children refuse to pay damages
 - (c) May not be deducted under any circumstances
10. Your 16-year-old son works during the summer for you in your unincorporated business, and you pay him a weekly salary. Since he is a full-time employee, he is . . .
 - (a) Required to pay social security
 - (b) Not subject to social security
 - (c) Permitted to decide whether he does or does not want social security coverage
11. Last year you gave your church a small piece of property for which you had paid \$500 some time ago. Its value at the time of the gift was \$1,500. As a result . . .
 - (a) You may claim a tax deduction of \$1,500
 - (b) You must pay a capital gains tax on the \$1,000 increase
 - (c) You may claim a tax deduction of \$500
12. There were a few leaks in the shingle roof of your office building; so you constructed a new tile roof. You should . . .
 - (a) Consider this as a repair bill and deduct the entire amount as a business expense on your 1957 return
 - (b) Regard this as a capital improvement and depreciate the cost over a period of years
 - (c) Add the cost of the repair to the value of the property
13. After you have filed your personal 1957 tax return, the Government is allowed to check your return and bill you for additional tax. The period of time in which this may be done ends . . .
 - (a) On the day you file your 1958 return
 - (b) Two years after you file your 1957 return
 - (c) Three years from the due date of your 1957 return
14. On the advice of a friend, you engage a CPA to prepare your 1957 tax return. The fee he charges for his service is . . .
 - (a) Not deductible since it is a personal expense
 - (b) Not deductible if you are entitled to a refund
 - (c) Deductible in full

Germicidal Detergent Compositions Containing “TAMED” Iodine



Photo Courtesy Cleanliness Bureau

Iodine has long been recognized as a valuable disinfectant for the skin when applied in the form of a tincture. The severe smarting which it causes in contact with an open wound is certainly not pleasant, but the antiseptic usually fulfills its purpose of preventing infection. Iodine is less selective in its action than many other germicides. It is highly toxic to fungi and viruses as well as to bacteria and the germicidal activity is maintained in the presence of blood serum and other organic matter. Because of these properties, iodine can be relied upon for sterilizing the skin in preparation for surgery.

Although iodine is an effective germicide for topical use, it is not suitable for incorporation in such products as antiseptic lotions and shampoos. It is too irritating and corrosive to body tissues. The odor, brown color and capacity to stain skin and textiles would all be objectionable in cosmetic products. The corrosive effect of iodine on metals is another bad feature of this antiseptic.

Non-ionic Solubilizers for Iodine

In recent years it has been discovered that iodine is “tamed” to a considerable extent when it is solubilized by means of certain non-ionic detergents. Soluble iodine preparations of this kind have been named iodophors. The polyethylene glycol ether of nonyl phenol, sold under the trade name Neutronyx 640^a, is used as a solubilizer for iodine in several commercial iodophor preparations. Igepal CO 630^b, Triton X-100^c and Nonic 300^d are other detergents of the same type as Neutronyx 640. The Pluronics^e, which are ethylene oxide condensates of polypropylene glycol, are also useful for preparing iodophors. Solutions of the iodophors have less odor than the usual iodine-iodide solutions and do not stain as much. They

The use of iodophors in shampoos and ointments will be acceptable in regard to toxicity and eye irritation, which made iodine impractical for these formulations.

are also less corrosive to most metals, although they do attack silver.

Combining iodine with a non-ionic solubilizer generally makes it less toxic when taken internally and reduces the irritating effect when it is applied topically.¹ However, there are variations depending on which solubilizer is used and on the ratio of solubilizer to iodine. Complexes of iodine with the Pluronics cause less irritation in the rabbit eye test than complexes made with detergents of the Neutronyx type. The high members of the Pluronic series are remarkably effective in reducing the oral toxicity of iodine.

When a solution of iodine in Neutronyx 640 is dissolved in water, the iodine is not all available as a germicide. Part of it is chemically bound in an organic complex. The concentration of available iodine can be determined by titration with sodium thiosulfate, as the iodine in the complex is not affected by the reagent. Non-ionic solubilizers of different types vary in the amount of iodine which they hold by chemical combination.

Iodophors as Sanitizers

The iodophors exhibit the highest germicidal activity in the acid range of pH values. A powdered material called Idonyx^f is available for preparing iodophor solutions.² The product consists of a mixture of iodine salts with a phosphate and Neutronyx PX powder. Sanitizing solutions are prepared by dissolving the powder in water and adding hydrochloric acid. The acid liberates iodine from its salts and reacts with the phosphate to form phosphoric acid. The powdered product is more stable and more convenient to handle than a liquid iodophor containing elemental iodine.

Acid solutions of Idonyx containing 1.75% available iodine and up to 30% Neutronyx 640 are recommended for cleaning and sanitizing equipment used in dairies, food processing plants and hospitals. They are also recommended for washing dishes in restaurants. The preparations are highly germicidal when diluted to 25 p.p.m.

a. Onyx Oil & Chemical Co., Jersey City 2, N. J.
b. Antara Chemicals div. of General Aniline & Film Corp., New York 14, N. Y.
c. Rohm & Haas Co., Philadelphia 5, Pa.
d. Sharples Chemicals, Inc., div. of Pennsylvania Salt Manuf. Co., Philadelphia 2, Pa.
e. Wyandotte Chemicals Corp., Wyandotte, Mich.

Reprinted from Schimmel Briefs, No. 286, July 1957

available iodine. The amber color of the solutions fades as the iodine is used up, thus indicating when they become ineffective as sanitizers.

Effects of Iodine on Hair

Ointments and shampoos containing iodophors have given good results in the treatment of ringworm infection in dogs, cats and other animals. Ringworm is a fungus disease of the skin and hair which is quite resistant to most antiseptics. The possibility of using iodine as an antiseptic in non-ionic detergent shampoos for human use has been studied by Cantor *et al.*¹ Their experimental work indicates that products of this type could be formulated which would be acceptable in regard to toxicity and eye irritation. However, the question of the effects of iodine on hair must be considered. When iodine in KI solution is applied to hair, iodine is rapidly adsorbed on the fibers and the color is fast to washing. In addition, some of the iodine enters into chemical combination with the hair protein. The iodine in iodophor solutions adsorbs on hair at a slower rate and can be removed by rinsing. It does not seem to cause any chemical damage to the hair.

Iodine Complexes with Quaternaries

Iodine can be solubilized by quaternary ammonium salts as well as by non-ionic surfactants.² The complexes formed are mild in their effect on the skin and mucous membranes. They are very powerful germicides since the solubilizers are themselves germicidal. In order to prepare the complexes, crystalline iodine or iodine in KI solution is added to a 50% solution of the quaternary ammonium salt until the point is reached where no more iodine is absorbed. This point is indicated by a positive starch color test for free iodine. All of the iodine in these complexes can be titrated with sodium thiosulfate and is available as a germicide. None is lost by chemical combination with the solubilizer as it is when iodine is added to detergents of the Neutonyx type.

Quaternaries having a dodecylbenzyl group in the molecule are outstanding in their capacity to solubilize iodine. One gram of dodecylbenzyl trimethyl ammonium chloride takes up 0.40 to 0.47 grams of iodine before yielding a starch test. Complexes of iodine with this quaternary were tested against samples of water artificially inoculated with *Aerobacter aerogenes*, *Escherichia coli*, *Staphylococcus aureus* and *Bacillus mycoides*. At a concentration of 8 p.p.m., the complexes containing 10% iodine and 20% iodine killed all the bacteria

in the water within five minutes. They were quite effective even at 2 p.p.m. Both iodine and the quaternary showed only slight bactericidal activity at 8 p.p.m. when tested separately against the same mixture of bacteria.

It is well known that quaternary ammonium salts are incompatible with the anionic detergents. Surprisingly enough, their complexes with iodine do not show this incompatibility. When an iodine-quaternary complex is added to a solution of a sulfated or sulfonated detergent, no turbidity or precipitation results.⁴ Furthermore, the germicidal activity of the complex remains at a high level in the presence of the anionic detergent. These complexes appear to have possibilities as antiseptics for use in shampoos based on sodium lauryl sulfate and other anionic detergents. Such products of course would have to be tested carefully to be certain they were not irritating to the skin and eyes or injurious to the hair.

An experimental formula for a dishwashing detergent containing an iodine-quaternary complex as a germicide is given below. This composition, diluted to a concentration of 0.05%, was tested for bactericidal activity against a mixed culture of *Staphylococcus aureus*, *Escherichia coli* and *Bacillus cereus*. The bacterial count was reduced by 99.9% in five minutes.

Germicidal Dishwashing Detergent⁵

Dodecyl benzene sodium sulfonate	45
Lauric isopropanolamide	12
Ethanol	26
Water	16
Dodecylbenzyl diethyl ethanol ammonium chloride-Iodine complex (20% I)	1.0

Germicidal detergent compositions of this type do not cause permanent staining of skin or of textiles and do not release iodine vapor under normal conditions of use. Although the odor of iodine is minimized, the perfuming of such products might be somewhat difficult, since the iodine could react with some perfume ingredients. The reaction between iodine and perfume would affect not only the odor of the products but their value as germicides.

¹ Cantor, Most and Shelski. Iodopher-iodine shampoos. *J. Soc. Cosmetic Chem.* 7(5): 419. Sept. 1956.

² Idonyx. Bulletin of Onyx Oil & Chemical Co.

³ U.S. 2,679,533. Darragh and House, assignors to California Research Corp. May 25, 1954.

⁴ U.S. 2,746,928. Darragh and Johnson, assignors to California Research Corp. May 22, 1956.

nation and their companies. Nine out of ten of these industrialists, whose collective company assets total more than \$27 billion, realistically expect their gross sales to climb anywhere from 26 to 300 per cent in the coming decade.

What New Product?

What new product would you like? That was the question Illinois members of the Manufacturing Chemist's Association asked recently in an on-the-street survey here.

About 200 persons were asked what new products they would like to lighten household chores, and improve clothing fabrics and cosmetics. Here are some of the results:

Most of the women said that dusting was their biggest household headache, and they wanted effective dust and dirt repellents. Men decided that dishwashing was the worst task around the house and asked for something to make it easier.

Troubles of Established Companies

Latest Dun & Bradstreet reports indicate that 1 out of 5 failures occur in firms that have been in business more than 10 years. In early postwar years, the rate was 1 out of 10 for these older firms. These are apparent signs that established companies are having trouble financing, and just can't keep pace with today's fast moving markets and management needs.

Decade of Booming Business

Between now and 1967, America's industrial growth will break all previous gross sales records—and this record-breaking expansion will take place in an atmosphere of continued economic stability and domestic peace. Such is the over-all prediction just made by a significant group of America's industrial leaders who were asked by Dun's Review and Modern Industry to take a searching look at the economic future of the

The Preparation of Aromatic Aldehydes

No. 9—Benzaldehydes from Aromatic Methyl Groups

1. Vapor Phase Oxidation of an Aromatic Methyl Group

Vapor phase oxidation of an aromatic methyl group to an aldehyde is effected by passing the aromatic compound, mixed with air or oxygen, over a suitable catalyst at high temperatures:



While the principles of this reaction are simple, much work is, and has been, devoted to such important variables as:

- a) Composition and preparation of catalysts
- b) Determination of the ratio between the aromatic compound and oxygen
- c) Contact (reaction) time between the catalyst and the mixture of the aromatic compound (in the vapor phase) and air or oxygen
- d) Reaction temperature.

If one of these variables is altered, the others must be adjusted accordingly. For example, different catalysts require different reaction times, temperatures, and amounts of oxygen. The most favorable conditions for a high conversion rate, a minimum development of by-products (such as acids), and a minimum destructive combustion, are best established in individual cases by a series of experiments.

As the reaction is exothermic, temperature control is absolutely necessary.

Best results are obtained with "mild" catalysts at relatively high temperatures with a short contact time. In general, the oxides of metals of the fifth and sixth groups are suitable catalysts. For example, a catalyst consisting of 93% of uranium oxide and 7% of molybdenum oxide is used for the oxidation of toluene to benzaldehyde at 500°C.; this is said to give good results.¹⁴² Vanadium oxide, a stronger catalyst for this reaction, and therefore better suited for the vapor phase oxidation to acids, yields 50% of benzaldehyde at 400-450°C.¹⁴³

Most of the work dealing with vapor phase oxidations is to be found in patent literature. Thus, silver vanadyl vanadate, or the corresponding vanadyl vanadates of the alkali metals, are used as catalysts in the



DR. KURT KULKA*

oxidation of various aromatic hydrocarbons, the xylenes, mesitylene, etc.¹⁴⁴ (Another example is the oxidation of cresol to salicylaldehyde.) Control agents, such as methanol, which are more rapidly oxidized than the hydrocarbon, can be admixed with the vapor mixture. Toluene and its homologs can be oxidized at 400-500°C. over vanadium pentoxide, or a catalyst consisting of a mixture of uranium and molybdenum.¹⁴⁵ Another patent covers the use of a catalyst consisting of at least 2 oxides of metals of the fifth and sixth groups of the periodic system at 300-700°C.¹⁴⁶ Such a catalyst may consist of one part of molybdenum oxide and ten parts of uranium oxide.

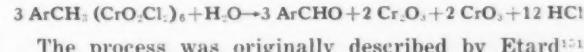
A critical review of the vapor phase oxidation of toluene to benzaldehyde, using five different catalysts, is given by Bigalli.¹⁴⁷ He obtained his best yield (47% of the theoretical amount) by using a catalyst consisting of vanadium pentoxide and uranium dioxide on sintered aluminum oxide at 446°C.

An interesting paper dealing with vapor phase oxidation of aromatic hydrocarbons is that of Weiss.¹⁴⁸ He describes how benzaldehyde is prepared on a relatively small scale in one plant by the vapor phase oxidation of toluene. Since this product is halogen-free, it is advantageously used in flavor and perfume compositions.

Much valuable data concerning vapor phase oxidation of organic compounds are compiled in the well known book by Marek and Hahn, "Catalytic Oxidation of Organic Compounds in the Vapor Phase"¹⁴⁹ and in the yearly reviews by Marek in "Industrial and Engineering Chemistry."¹⁵⁰

2. The Etard Reaction

In this reaction, a methyl or other alkyl group attached to an aromatic ring is oxidized to an aldehyde by means of chromyl chloride:



The process was originally described by Etard¹⁵¹ and its technique improved by Bornemann.¹⁵²

The advantages of Etard's method over some other oxidation processes are:

- a) The reaction can be stopped when the aldehyde

*Fritzsche Brothers Inc.

- is formed, preventing oxidation to the acid.
b) Relatively high yields are obtained (70-80% of the theoretical).

A serious disadvantage of the reaction is this: chromyl chloride is explosive and can ignite alcohols, terpenes and olefins. Special precautions and careful handling of the reactants are therefore necessary. This confines the method to particular cases and small-scale operations. In spite of these drawbacks, the Etard reaction is often considered one of the best methods of preparing moderate amounts of substituted benzaldehydes.¹⁵³

The preparation of *m*-tolualdehyde is an example of the process:

A solution of 100 g. of chromyl chloride in 700 g. of carbon disulfide is added over a period of 7 hr. to a solution of 25 g. of *m*-xylol in 200 g. of carbon disulfide. The reaction is exothermic, and cooling is necessary to keep the reaction temperature between 25° and 45°C.

The red color of the reaction mass changes gradually to brown, indicating the formation of the above addition compound, which precipitates completely after approximately 12 hr. The solid is separated and liberated from carbon disulfide by careful warming under reduced pressure. The strongly hygroscopic compound is then gradually added to cold water, forming the aldehyde. The aldehyde must be removed rapidly from the solution, to prevent oxidation by the chromic acid.

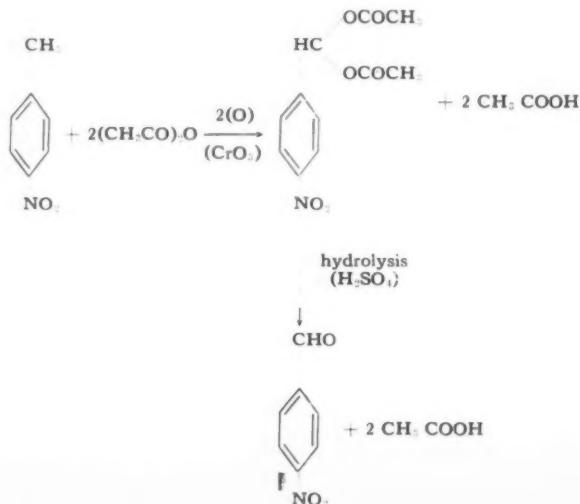
3. Oxidation of an Aromatic Methyl Group with Chromic Acid

Oxidation of an aromatic methyl group to the formyl group with chromic acid, in the presence of acetic anhydride and sulfuric acid, was applied for structural determinations by Thiele and Winter.¹⁵⁴

In conducting the reaction, excess solid chromic acid is gradually added to an agitated, well-cooled solution of the organic methyl compound dissolved in acetic and sulfuric acids. After completion of the reaction, the reaction mass is poured on ice, and the diacetate separated. On acid hydrolysis the aldehyde is liberated.

The method is of general interest in the preparation of substituted benzaldehydes from aromatic methyl compounds, where other substituents are not attacked by the oxidation.

The preparation of *p*-nitrobenzaldehyde is an example of the reaction:¹⁵⁵



A mixture of 600 g. of glacial acetic acid, 612 g. of acetic anhydride, 50 g. of *p*-nitrotoluene, is cooled in an ice-salt bath. Under agitation, and at a temperature of 5-10°C., 147 g. of concentrated sulfuric acid are slowly added, followed by the gradual introduction of 100 g. of chromium trioxide. Agitation is continued for 10 min., the reaction mass poured on ice, and the total volume made up to 5-6 liters of water. The separated solid diacetate is washed with water and with a 2% sodium carbonate solution, collected on a Buchner funnel, and washed with cold water and alcohol. The yield amounts to 44-49 g. (48-54%) of the theoretical.

45 g. of the crude *p*-nitrobenzaldiacetate are refluxed with a solution of 100 cc. of water, 100 cc. of alcohol and 10 cc. of concentrated sulfuric acid. After one-half hour the hot solution is filtered. The filtrate is cooled and the separated crystals collected on a Buchner funnel, washed with water and dried. The yield of the aldehyde amounts to 22-24 g. (82-89% of the theoretical). On dilution of the remaining filtrate with approximately 300 cc. of water, another 2-3 g. of the aldehyde are obtained.

4. Oxidation of an Aromatic Methyl Group with Manganese Dioxide

This reaction may be illustrated as follows:



One of the early applications of this process was in the preparation of benzaldehyde from toluene:¹⁵⁶

To a mixture of 300 g. of toluene and 700 g. of sulfuric acid 65% were added gradually, under agitation, 70 g. of finely powdered manganese dioxide, keeping the reaction temperature at 40°C. After completion of the reaction, the mixture was steam distilled. The distillate, after fractionation, yielded 50 parts of benzaldehyde and 250 parts of unreacted toluene. The large excess of toluene used in the reaction was intended to prevent the formation of benzoic acid.

An improved process resulted from the use of a catalyst, described in a later patent.¹⁵⁷

A mixture of 92 g. of toluene, 100 g. of manganese dioxide (85%), 150 g. of sulfuric acid, 450 g. of water, and 5 g. of a catalyst consisting of ferric, cupric or cerium sulfate, was heated to boiling and steam passed through. The distillate consisted of benzaldehyde and unreacted toluene. As long as there was free manganese dioxide, the recovered toluene was returned to the process.

While this type of oxidation is no longer employed for production of benzaldehyde, it still has some commercial significance. For example, salicylaldehyde is prepared by this process, starting from *o*-cresol. In this process, the phenol group is first protected by esterification with benzenesulfonic acid, then the methyl group is oxidized.¹⁵⁸

The preparation of anisaldehyde from *p*-cresyl methyl ether is another example of the process. Lewinsohn¹⁵⁹ described this as follows:

A solution of 95 g. of sulfuric acid in 500 g. of water is cooled to 10°C. 75 g. of *p*-cresyl methyl ether are added, and the temperature raised to 35-37°C. 75 g. of manganese dioxide (85-90%, and finely powdered) are added in amounts of 2-3 g. while stirring, and at intervals of 5-10 min., keeping the reaction temperature between 35-37°C.

After the addition of the manganese dioxide, agitation is continued for 5-6 hr. at room temperature. After standing overnight, the anisaldehyde is separated from the reaction mixture and worked up.

These examples give a general idea of the reaction. However, the following should also be kept in mind:

- The reactivity of the methyl group will depend on its position in the ring and the influence of other ring substituents.
- The reaction temperature should be kept constant and usually above 35°C., although not higher than 100°C.
- The theoretical amount (or slightly less) of manganese dioxide should be used in most of the cases.
- Addition-time of the manganese dioxide will depend largely upon the rate of reaction. The manganese dioxide is added in portions, and each portion should be consumed before the next is added.
- Efficient agitation must be maintained throughout the reaction.
- The presence of a large excess of sulfuric acid in the reaction mixture is essential.
- Freshly prepared (activated) manganese dioxide will give greatly improved yields.

5. Oxidation of Aromatic Methyl Group Using Various Metal Oxides

In the oxidation of aromatic methyl groups to aldehydes, metal oxides other than manganese oxide can be used.

a) Lead Peroxide

Lead peroxide can be used in conjunction with various acids, such as acetic, sulfuric, phosphoric, or hydrochloric:



An example of this reaction is the oxidation of toluene to benzaldehyde.¹⁶⁰

280 g. of lead peroxide are placed in a lead-lined vessel which is surrounded by ice. 300 cc. of dilute sulfuric acid are added. The solution is agitated, and 50 g. toluene gradually added. The reaction temperature will rise to approximately 40°C., but will drop afterwards to 10-15°C. To complete the reaction, the reaction mixture is heated for one-half hour on a steam bath. Steam distillation, followed by fractionation of the distillate, gives benzaldehyde in a 24% yield.

b) Cerium Dioxide

This reaction is similar to that mentioned above. Oxidation of toluene with cerium dioxide in the presence of sulfuric acid, at a temperature of 60-90°C., yields 33% of benzaldehyde. The added cost, however, does not warrant its use, except in special cases.¹⁶¹

c) Nickel Oxide

Nickel oxide is used as such without an acid in this type of oxidation.¹⁶² For example:

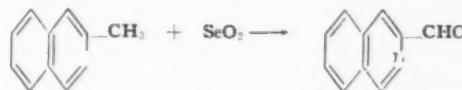
300 g. of toluene and 150 g. nickel oxide are heated to 100°C. for 5-6 hr. After filtration, benzaldehyde in a low yield, and unreacted toluene, are obtained.

d) Selenium Dioxide

One of the more recent oxidizing processes employs selenium dioxide, and is rather simple.

The organic compound and the calculated amount of selenium dioxide are reacted at elevated temperatures, usually in the presence of a solvent. The selenium dioxide is reduced to elemental selenium.

While oxidation with selenium dioxide is generally associated with aliphatic methyl or methylene groups, it can be used for the conversion of aromatic methyl groups in special cases. Thus, the preparation of the aldehyde from 3-methyl-isoquinoline:¹⁶³



Selenium dioxide is added to 3-methyl-isoquinoline in small portions, at 180-220°C. and under agitation. The reaction mixture is then kept for 10 min. below 220°C., and finally worked up, yielding 48% of aldehyde.

Noteworthy is the preparation of phenylglyoxal from acetophenone:



The procedure, as described by Riley and Gray¹⁶⁴ follows:

A mixture of 111 g. of selenium dioxide (or 129 g. of selenious acid), 20 cc. of water, and 600 cc. of dioxane (or 600 cc. ethyl alcohol) is agitated at 50-55°C. until solution is complete. 120 g. of acetophenone are added in one portion, and the mixture refluxed with agitation for 4 hr. The selenium is separated from the hot solution, and after evaporation of the solvent, the phenylglyoxal is obtained in a yield of 93-96 g. (69-72% yield) by fractionation.

For a review-discussion of selenium dioxide oxidations, see Rabjohn.¹⁶⁵

REFERENCES

- R. L. Clark and C. P. Neidig, in "Encyclopedia of Chemical Technology," ed. by R. E. Kirk and D. F. Othmer, Vol. 2, p. 414; New York, Interscience, 1948.
- L. Marek and P. H. Groggins, in "Unit Processes in Organic Chemistry," 4th Ed., p. 415; New York, McGraw-Hill, 1952.
- Alphonso O. Jaeger (to Selden Co.), United States Patent 1,909,354 (May 16, 1933).
- John M. Weiss and Charles R. Downs (to The Barret Co.), United States Patent 1,377,534 (May 10, 1921); cf. the same patentees, United States Patent 1,380,277 (May 31, 1921).
- Augustus E. Craver (to The Barret Co.), United States Patent 1,636,854 (July 26, 1927).
- D. Bigalli, *Engenho e quim.* 2 (1950), 7.
- J. M. Weiss, *Chem. Eng. News* 32 (1954), 1820.
- L. F. Marek and D. A. Hahn, "Catalytic Oxidation of Organic Compounds in the Vapor Phase," New York, Chemical Catalog Co., 1932.
- See, for example, *Ind. & Eng. Chem.* 47 (Sept. 1955), 1896-1902.
- A. Etard, *Acad. Sci. (Paris) Compt. rend.* 90 (1880), 534; cf. *Ann. chim. phys.* (5) 23 (1881), 223.
- E. Bornemann, *Ber. deut. Chem. Ges.* 17 (1884), 1462.
- Conrad Weygand, "Organic Preparations," New York, Interscience, 1945.
- J. Thiele and E. Winter, *Liebigs Ann.* 311 (1900), 353.
- S. V. Lieberman and R. Connor, in "Organic Syntheses," Coll. Vol. 2, p. 441; New York, John Wiley, 1943.
- Société Chimique des Usines du Rhône, German Patent 101,221 (Sept. 23, 1897).
- Alan I. Applebaum (to Import and Byproducts Co.), United States Patent 1,302,273 (April 29, 1919).
- Badische Anilin-und Sodaefabrik, German Patent 162,322 (June 7, 1903).
- A. Lewinsohn, *Perfumery Essential Oil Record* 14 (1923), 398.
- H. D. Law and F. M. Perkins, *J. Chem. Soc. (London)* 91 (1907), 258.
- Farbwerke vorm. Meister Lucius & Brüning, German Patent 158,609 (Feb. 18, 1902).
- Badische Anilin-und Sodaefabrik, German Patent 127,388 (Aug. 25, 1900).
- E. Teague, Jr., and A. Roe, *J. Am. Chem. Soc.* 73 (1951), 688.
- H. A. Riley and A. R. Gray, in "Organic Syntheses," Coll. Vol. 2, p. 509; New York, John Wiley, 1943.
- N. Rabjohn, in "Organic Reactions," Vol. 5, p. 331; New York, John Wiley, 1949.

Business Outlook

A survey of business men's expectations for the fourth quarter of 1957 by Dun & Bradstreet revealed that for every manufacturer who expects his sales volume to drop below a year ago, eight manufacturers expect an increase. Also 89% expect net profits in the last quarter to exceed those of 1956. Consumers show less enthusiasm than last year at this time.

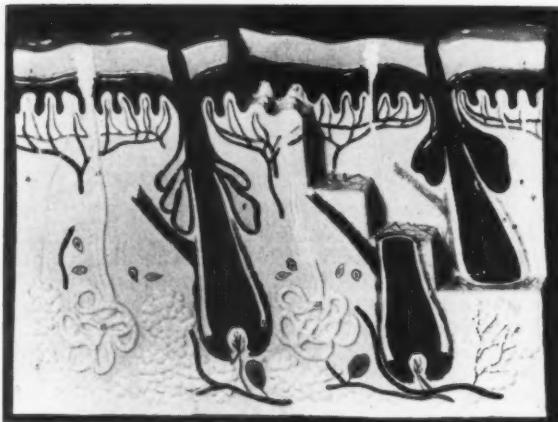


Photo Courtesy Monsanto Chemical Co.

Abstracts

from the London Symposium on "The Biology of Hair Growth"

Introduction.

William Montagna.

From the point of view of biology, hair follicles are exciting organs. During the cycles of growth, which in different regions of the body last for days or years, they grow to the fullest extent of their inherent ability, and during the time of quiescence they are dormant. Numerous and inexplicable biological phenomena take place, including cyclical growth, differentiation and induction. These phenomena are demonstrated and repeated through each full cycle of growth of a hair generation. The purpose of this symposium is to bring together the various distinguished scientists who have studied the different aspects of the biological problems of hair growth. These range from considerations of growth to the synthesis and chemistry of the hair fiber. We have deliberately excluded the problems of alopecia and pathology; these problems must await future considerations when we understand more fully the normal events in hair growth.

Introduction.

Stephen Rothman, Dept. of Medicine, University of Chicago, Chicago, Illinois.

The pilary system is a perfect microcosmic structure in which we find birth, development, aging and death, activity and rest, color formation and decoloration, greasiness and dryness, infection and sterilization, hypertrophy and atrophy, benign tumors and malignant ones. Such a complexity of functions has attracted the attention of very different groups of scientists, and there is hardly any other field in which the groups of interested people is so heterogeneous as they are in the topic of hair growth.

"Anatomy of the Hair Follicle".

Eugene J. Van Scott, Dermatology Service, National Cancer Institute, Bethesda 14, Maryland.

The hair follicles of various regions of the body have

a basic similarity in structure; modifications and deviations from this basic pattern serve to identify and differentiate the hair follicles of one region from those of another.

The hair follicles of the scalp are large, the roots of growing hairs extend deeply into the corium, and the sebaceous glands vary in size. Hair follicles occur singly or in groups; each follicle remains as an individual unit within such a group until the level of the epidermis is reached, at which point the follicles may merge into a common follicular pore. Hence, on the surface of the scalp multiple hairs may appear to emerge from a single follicle.

The hair follicles of the male beard are comparable in size to those of the scalp but they tend to occur singly. A distinguishing feature of the follicle is a division of the lumen of the follicular neck into two distinct channels: through one channel traverses the shaft of the hair; the other directly connects the excretory duct of the sebaceous gland with the skin surface.

Approximately one-half of the hair follicles from the upper back are twin rooted. In such follicles two hair roots, each with its own sebaceous gland, are conjoined at the base of a common follicular neck. Hair shafts emerge to the surface through the common follicular neck and follicular pore.

Roots of mechanically extracted hairs may be identified as growing (anagen), involutinal (catagen) or resting (telogen) by simple microscopic examination.

"The Histology of the Human Hair Follicle".

William Montagna, Biology Dept., Brown University, Providence 12, Rhode Island.

The growing or proliferative part of a hair follicle is the matrix in the lower part of the bulb. This is composed of indifferent cells whose main function is to proliferate; the cells move up and synthesize keratin that forms the hair and the inner root sheath. The outer root sheath, once formed at the beginning of the hair growth cycle, remains fairly static. In the upper part of the bulb the indifferent cells that have arisen from the matrix



Chatting during a respite at the Symposium are, I to r, Dr. R. Mariott, Bob Eckton, Walter Wynne and Mr. and Mrs. Harry Polkinhorne

become larger and begin to undergo their characteristic differentiation; the inner sheath is interlocked within the hair and must grow at the same rate as the hair. In the upper part of the bulb melanocytes synthesize melanin and feed it out to the cells that make up the cortex and medulla of the hair; the cuticle of the hair and the entire inner sheath remain non-pigmented. At the end of a hair growth cycle the follicle forms a club hair and the bulb is largely destroyed; a residual vestige of cells is left behind as the seed for the next generation of cells.

The quiescent hair follicle is totally different from an active follicle. It is much shorter than an active follicle and consists of a sac of epidermal cells around the hair club; the sac remains in contact with the dermal papilla by a stalk of indifferent epidermal cells. The stalk of cells and the cells at the base of the epidermal sac comprise the hair germ from which regrows a new hair follicle, when activity sets in again.

Capillary networks are particularly rich around the lower part of active hair follicles. Tufts of capillaries penetrate the dermal papilla and connecting branches form a rich plexus around the entire bulb. In the upper two-thirds of the follicles, vascularity is scant. The vascular pattern of quiescent follicles is quite different. Since the bulb of the active follicles degenerates, the plexus of capillaries around it collapses in a bundle at the base of the dermal papilla. The papilla itself flows away from the tufts of capillaries and comes to rest immediately above it.

Just below the entrance of the sebaceous gland, hair follicles are surrounded by a collar of sensory nerves that record pressure stimuli. Oddly enough, these nerves are rich in cholinesterase, like the nerves of the parasympathetic nervous system. These sensory nerves are particularly in evidence around the nerves of the scalp.

"The Histochemistry of the Hair Follicle".

Otto Braun-Falco, Joh. Gutenberg-Universität Hautklinik, Mainz, Germany.

This paper presents a review of the histochemical findings in human hair follicles. Of the inorganic substances, calcium, magnesium, zinc, copper, sulphates, phosphates and iron have been investigated in quiescent and active hair follicles. The distribution of Glycogen, PAS-positive but diastase resistant material and acid mucopolysaccharides in and around hair follicles is different during the different stages of hair growth. These substances are much more abundant in growing than in resting hair follicles. For the first time the histotopography of lipids, and especially that of phospholipids, unsaturated lipids and plasmal, has been reported fully in the different parts of the hair follicle. Amino acids, protein-bound sulphhydryl groups and disulphide groups, as well as nucleic acids, have been studied during different stages of hair growth. The histochemical localization of enzymes



Mr. and Mrs. Sam Grant, on the left, pause for a moment with Mr. and Mrs. Dick Malmstrom

in the hair follicles is particularly important. Phosphorylase, succinic dehydrogenase, cytochrome oxidase, esterases, acid and alkaline phosphatases, 5-nucleotidase, glucose-6-phosphatase, cholinesterase, β -glucuronidase, amino-peptidase and carbonic-anhydrase have been studied and an attempt has been made to deduce their functional importance in relation to hair growth.

Histochemical studies of hair keratinization are somewhat hampered by technical limitations of the methods used for the identification of keratin. The histochemical composition of trichohyalin and of the keratinization, the significance of the nuclei in relation to keratinization, and the fate of the nuclei during keratinization are discussed.

"The Electron Microscopy of the Hair Follicle".

E. H. Mercer, Chester Beatty Research Institute, Royal Marsden Hospital, London, S.W.3, England.

Thin sections of a variety of keratinized tissues, hair, skin, feathers, etc. show that a continuous structureless dermal-epidermal membrane (ca. 400 Å thick) separates the epidermis from the dermis. The basal layer of epidermal cells, usually somewhat columnar, are attached to the dermal-epidermal membrane but their plasma membranes are separated from it by a less dense layer.

The epidermal (Malpighian) cells contain small mitochondria, agranular vesicles (Golgi type), and large numbers of dense ribonucleoprotein (RNP) particles which are not associated with the membranes to form an endoplasmic reticulum such as occurs in protein secreting cells.

Fibrous keratin first appears as wispy bundles of fine filaments (100 Å) which in hair and feather aggregate to form definite fibrils lying parallel to the lengthening cells. In skin the filaments show a lesser tendency to form bundles and the orientation is more random. Frequently, the fibrils seem to sprout from the plate-like cell contacts (see later).

In the hair cortex the bundles of filaments grow in length and width and, above the bulb construction, stain

more readily with the osmium fixative. High resolution micrographs show that the stain is associated with a material between the original filaments. It is proposed, therefore, that fibrous keratin is a duplex structure consisting of a system of fine parallel α -filaments (ca. 60 Å diameter) cemented together with a material high in cystine and probably not fibrous (γ -component).

In the inner root sheath trichohyaline granules accumulate at first and later transform into fibrils. A similar change probably takes place in the keratohyaline of skin.

Epidermal tissues show several remarkable, specialized cell contacts. In skin, outer root sheath and feather, these take the form of localized plates comprising a thickened cell membrane and several layers of dense material within the cytoplasm "backing." Fibrils may sprout in tufts from the plates. At higher level several layers of intercellular material appear between the "plates." A similar dilation of the membranes, with the interpolation of intercellular sheets, occurs generally in the hair and is most marked in the cuticle and inner sheath. These contacts may be associated with strengthening the formations.

"The Chemistry of Keratinization".

A. Gedeon Matoltsy.

In the early stage of keratinization, the formation of cytoplasmic fibrils appears to be a basic mechanism which later becomes associated with decomposition and elimination of certain cytoplasmic and nuclear elements. Although these are common properties of keratinizing cells of both hair cortex and epidermis, the actual mechanism of keratinization is different. In the differentiating cells of the hair cortex, the cytoplasmic fibrils gradually reach a high concentration and the cells practically consist of fibrils when the nuclear and cytoplasmic activities cease. A quite perfect elimination of non-keratin constituents also takes place. In differentiating epidermal cells cytoplasmic fibrillation does not seem to be a gradual process and the fibrils never seem to reach concentrations as high as in differentiating cells of the hair cortex. Elimination of nuclear and cytoplasmic non-keratin components is also less perfect.

Difference can be recognized in the chemical composition of the keratin which is formed in both hair cortex and in the epidermis. While hair keratin contains the basic amino acids: histidine, lysine and arginine in a characteristic ratio of 1:3:10, this ratio is absent in epidermal keratin. The other amino acids also occur in differing quantities. It would appear that either the availability of amino acids might be different in the hair follicle and the epidermis, or that keratin synthesis proceeds according to different principles in these keratinizing tissues.

"The Biosynthesis of Fibers".

E. H. Mercer.

The formation of many fibrous systems follows the following course: primary synthesis of a non-fibrous macromolecular precursor, the transformation of the precursor into fibrous modification, the arrangement of these protofibrils into more organized structures and, in some cases, the hardening or tanning of the final formation.

Thin sections of a selection of fiber-forming cells, including silk forming cells of the silkworm, collagen forming fibroblasts of the skin of the rat, the cells forming the egg case of the cockroach, certain chitin forming cells of insects, and mammalian epidermal cells, lead to the following tentative conclusions: protein fiber forma-

tion is associated with the presence of dense ribonucleoprotein (RNP) particles, as is also the case with cells forming soluble proteins; chitin forming cells have few dense RNP particles; if the fiber-precursor is to be secreted from the cell the RNP particles are associated with reticulum; if the protein fibrils merely accumulate within the cells the RNP particles lie in clusters freely in the cytoplasm. The secretion of the protein precursor may be effected through long thin finger-like protrusions of the cell membrane or, if synthesis is very rapid, large accumulations may separate in lumps at the cell edge.

The transformation of the non-fibrous precursor into protofibrils seems most often to be a kind of aggregation into linear or helical aggregates in which the original structure of the macromolecule is preserved. These protofibrils often separate spontaneously in vitro and may be photographed. The organization of protofibrils into parallel arrays, networks, membranes, etc. is due to some added control mechanism, such as shear due to flow or the presence of already organized material. Keratin protofibrils form spontaneously and in hair seem to owe their orientation to a slight initial flow in the deformed cells; this controls the direction of fibrils subsequently added.

"The Nature of Hair Pigment".

Thomas B. Fitzpatrick, Peter Brunet and Atsushi Kukita, Dept. of Dermatology, University of Oregon, Portland, Oregon.

The large variety of hair pigments has provided material on which naturalists, geneticists, and biochemists have been able to carry out comparative studies on the nature and control of pigmentation. Although superficial examination of hair would indicate a wide range of color hues, microscopic examination has revealed only three types of pigmented granules, namely, black, brown and yellow.

The study of the nature of hair pigment has proved generally unrewarding because it has not yet been possible to isolate pure fractions for chemical characterization. Many of the advances on the nature of hair pigment have been made using the synthetic approach following the action of enzymes in the hair bulb on chromogenic substrates. But, ultimately it will be necessary to combine such a synthetic approach with chemical analysis of naturally-occurring pigment.

Differences in hair color are biochemical differences and the genetic pattern of hair color indicates that brown and black pigment is under the same genetic control, whereas, yellow (pheomelanin) is under a different genetic control. Thus, two separate, but possible interrelated, metabolic pathways of brown-black and yellow hair pigment are suggested.

Using a histochemical radioautographic technique and D-tyrosine-2-C¹⁴ as a substrate, it has been shown that the hair bulbs of mice incorporate tyrosine into pigment cells. The activity of tyrosinase is related to the stage of the hair cycle. In the C-57 black mouse, tyrosinase activity is not detectable with the radioautographic technique during Anagen I and II, but appears weakly in Anagen III and gradually increases in amount during Anagen IV, V and VI. Tyrosinase activity is absent during the Telogen stage of the hair cycle. The factors that regulate the tyrosinase activity during the hair growth cycle are not known. It is possible, as suggested by Chase, that the cessation of tyrosinase activity just prior to catagen may be related to the development of an inhibitor.

The degree of incorporation of tyrosine-2-C¹⁴ indicated by silver deposit in the radioautographs is very strong in intense brown mice (a/a; b/b; C/C; D/D;

P/P) and in brown mice with Maltest dilution where d/d replaces D/D. There is slightly less incorporation in both yellow mice (A'/a; B/B; C/C; D/D; P/P) and intense blacks (a/a; B/B; C/C; D/D; P/P) and decreased but detectable incorporation in black mice with pink-eyed dilution, p/p replacing P/P of the intense blacks. Albinos showed no uptake of labeled tyrosine. The ability to oxidize tyrosine is thus found in both melanic and pheomelanic follicles, melanic animals showing a greater activity than pheomelanic.

It is quite clear at this time that black and brown melan appear to be closely related chemically, and genetic evidence indicates that their modes of formation are closely similar. Pheomelanin differs chemically from melanin, and genetical evidence indicates a very distinct mode of formation for the two pigments. Tyrosinase is involved in the formation of both melanin and pheomelanin, and tyrosine can be considered to be the precursor of melanin. While tyrosine will act as a substrate for pheomelanic hair follicles *in vitro*, the pigment formed is abnormal, and there is little or no indication that tyrosine is the natural chromogen of pheomelanin; the oxidation of tyrosine by pheomelanic follicles may be involved only indirectly in pigment formation, and tyrosine (or its oxidation products) may not be the pigment precursor. The activity of the genes for pheomelanin production in the guinea pig or the mouse "turn on" the production of pheomelanin in a very definite way; no intermediates between melanin and pheomelanin appear to be formed. This clear-cut action of the genes presupposes a switch-mechanism, probably involving one enzymic step. The possible dual role of tyrosine and tryptophane intermediates in this switch-mechanism is suggested by the investigations of Butenandt who showed that the formation of the red-yellow pigment, xanthomatin, depended on the conversion of dopa to dopa quinone in the presence of tyrosinase, and the non-enzymic oxidation of 3-hydroxykynurenin to xanthommatin by the dopa quinone which was reduced back to dopa. In some histochemical experiments using red human hair bulbs and hair follicles of intense yellow, e/e, guinea pigs, we have demonstrated that melanin formation is absent in pheomelanic human and guinea pig hair follicles following incubation in dopa and 3-hydroxykynurenin in a molar ratio of 1:4 for 20 hours. If the ratio of these substrates is 4:1 (dopa: 3-hydroxykynurenin) no black pigment is formed in four hours, but after 20 hours (all the 3-hydroxykynurenin having been oxidized) black pigment is found to have been deposited. These results provide necessary but not sufficient evidence for an explanation of pheomelanin formation as the result of the oxidation of an o-aminophenol by dopa quinone produced by the oxidation action of tyrosinase on dopa. It is compatible with the observation that pheomelanic hair follicles contain tyrosinase, and it would explain the pigmentary switch-mechanism leading either to melanin or pheomelanin, this being the result of the absence or presence of o-aminophenol. The critical enzyme operating the switch could be one bringing about hydroxylation of an aromatic amine. The yellowish-brown pigments formed by the oxidation condensation of o-aminophenols are soluble, as is pheomelanin, in dilute alkali. Although no systematic search for tryptophane intermediates has been made in hair, Rebell has recently isolated kynurenin from the yellowish hair of albino rats. In addition, we have observed that pheomelanin hair when illuminated with wave-lengths of 3600 Å is fluorescent, and emits light varying from a dull-orange to bright yellow. Yellow hair, the pheomelanin banding of agouti hair of mice, guinea pigs and golden hamsters and human red hair show this effect. The fluorescence of the mixture of 3-

hydroxykynurenin and dopa in which hair follicles had been incubated was a dark orange of color resembling that of an alkaline extract of pheomelanic hair.

"The Behavior of Pigment Cells and Epithelial Cells in the Hair Follicle".

Herman B. Chase, Biology Dept., Brown University, Providence 12, Rhode Island.

In the germ region of the regenerating hair follicle there are two centers of growth, one around the dermal papilla and giving rise to the bulb, the other producing the elongated lower external sheath. The first portion of the inner sheath forms from the early bulb and more is added as the bulb descends. The cells of the matrix, the lower bulb, are indeterminate in that they can be mechanically displaced and still give rise to the three layers of the inner sheath and the three regions of the hair shaft. Melanocyte stem cells reside in the upper bulb which is derived from the germ region capping the dermal papilla. The mature melanocyte has short dendrites, the cell body projects into the cavity of the dermal papilla and it delivers granules to be engulfed by the recipient hair cells. The club and surrounding capsule are formed at catagen from cells of the bulb matrix but only after the dermal papilla has become partially rounded.

"The Electron Microscopy of the Melanocyte".

N. A. Barnicot, University College, University of London, London, W.C.1, England, & M. S. C. Birbeck, Chester Beatty Research Institute, Royal Marsden Hospital, London, S.W.3, England.

The examination of melanocytes from human hair bulbs with the electron microscopy has allowed the mechanism of pigment granule formation to be studied.

A region near the nucleus of the melanocyte, corresponding to the Golgi region, contains numerous small vesicles; these consist of an outer membrane with several concentric inner membranes. Melanin is deposited upon the vesicles, to form the completed pigment granules. These are then transferred to the cortical cells of the hair. Examination of albino hairs has shown that the complex membrane structures are synthesized by the melanocyte, but do not become pigmented with melanin. Similar structures have also been found in the melanocyte of human skin.

"Vascularity and Patterns of Growth".

A. Durward and K. M. Rudall, Dept. of Anatomy, University of Leeds, Leeds 2, England.

The blood supply to skin and to hair has been reviewed and variations in the supply to different types of hairs and to hairs during the phases of growth have been studied particularly in the rat and the rabbit. In the rat the monotrich has a rich supply from a dense network of capillaries around the lower half of the follicle and the dermal papilla contains capillaries; awls have a less dense plexus of capillaries around the follicle and no papillary capillaries; the smaller follicles do not possess individual plexuses, nor do they have vascularized papillae.

In naturally occurring hair growth waves, as seen in the rat and the rabbit, the wave of hair growth is accompanied by a corresponding intensification of the blood supply which keeps step with the growth or recession of the follicle. These vascular changes have been studied in detail in the animals mentioned.

Artificially induced growth of hair by pulling and the associated vascular changes were studied in the rabbit

Amerchols

LANOLIN CHOLESTEROLS in their most active form.

The Amerchols are non-ionic, natural **EMULSIFIERS, PENETRANTS and EMOLIENTS** made from pure lanolin. They will help you achieve superior cosmetic and pharmaceutical formulations by markedly improving stability, texture, appearance and effectiveness.

An Amerchol such as multi-sterol, liquid **Amerchol 101** enhances softening, penetrating and spreading activity while holding desirable moisture to the skin. The surface active Amerchols function at the interface in oil-in-water emulsions to bring about these unique effects on skin and hair.

The Amerchols are ideal, stable ointment bases which induce rapid drug release, and promote optimum healing rates.

WE KNOW OF NO CASE OF AN ALLERGY DUE TO AN AMERCHOL.



American Cholesterol Products
INCORPORATED
AMERCHOL PARK EDISON, NEW JERSEY

Write on your business letterhead for technical literature and suggested formulas.

and again a clear inter-relationship was established between hair growth and the vascularity. Local erythematous and oedematous phenomena occur in the skin following pulling.

Pulling single guard hairs in rabbits does not induce regrowth. There is a critical number of fibers (varying with conditions) which must be pulled before regrowth is started immediately. This shows that the act of pulling in itself is insufficient to cause immediate commencement of growth in a single follicle.

"Mitotic Activity of the Follicle".

W. S. Bullough and E. B. Laurence, Dept. of Zoology, Birkbeck College, University of London, London, England.

1. The distribution of mitotic activity in the growing follicle of the adult mouse is described. In the fully grown follicle such activity is confined to the matrix cells of the bulb.

2. Observations *in vitro*

a. It is shown that, for the development of active mitosis in a hair bulb, adequate supplies of oxygen and of some suitable carbohydrate substrate are essential. In the absence of either the mitotic activity is powerfully inhibited.

b. Ideal carbohydrate substrates for the support of mitotic activity are glucose, fructose, and pyruvate. The various Krebs cycle intermediates tested were not efficient in this respect.

c. Any substance which is known to inhibit the process of glycolysis, of the Krebs cycle, or of the cytochrome system, also inhibits the mitotic activity of hair bulbs. The substance 2:4 dinitrophenol which is said to inhibit the process of energy transfer has the same effect.

d. All the available evidence, therefore, points to the conclusion that the high mitotic activity of a hair bulb can only be maintained by a high level of energy production in the cells. Therefore, it must be expected that mitotically active hair bulbs will normally absorb large quantities of glucose and oxygen, and this is supported by the observations of Ryder (p. 8) on the rate and uptake of radioactive glucose.

3. Observations *in vivo*

a. Unlike the surface epidermis the matrix cells of a rapidly growing hair follicle show no signs of any diurnal rhythm. No mitotic depression is seen after 6 hours of forced exercise.

b. In starved mice the mitotic activity of the matrix cells does not become depressed until after about 36 hours when the animals are in a state of collapse, and at that time the addition of glucose is all that is needed to restore the mitotic activity to normal.

c. In full shock induced by the removal of tourniquets or by the injection of ATP the mitotic activity of the matrix cells is almost completely inhibited, but in partial shock mitotic activity is not greatly affected. In skin taken from fully shocked mice and incubated with glucose, mitotic activity returns to normal almost immediately.

"Physical Factors which Influence the Growth of Hair". Herman B. Chase.

The production of hair might be increased in five ways: (1) initiation of a new growth in a quiescent follicle; (2) delay or complete prevention of the quiescent state; (3) transformation of a follicle into one having a longer growing and a shorter resting phase; (4) production of new follicles or multiple follicles; (5) increase in the growth rate of a follicle. The first of these is the only practicable one; many physical and chemical agents are effective and initiate a new growth

of a quiescent follicle. Almost any agent which can cause sufficient damage to result in moderate epidermal hyperplasia is effective in initiating growth in a quiescent follicle. X-ray, at a dose of about 1500 r in either the mouse or the rabbit, stimulates quiescent follicles to activity; plucking of club hairs is the best known method and stimulates follicular activity at once.

X-rays cause a depilation of growing follicles sooner than that required for resting follicles and at a lower dose. In the mouse in which the same follicles may have a resting element with a club hair together with a growing element with a bulb, depilation by X-rays of each of these hairs is independent and characteristic. This indicates that the effect is on the epithelium and not dependent on vascularity.

"Effects of Ionizing Radiation on Hair Roots of the Human Scalp".

Eugene J. Van Scott.

The direct effect of ionizing radiation on hair follicles can be studied by microscopic examination of unstained roots of hairs extracted from the irradiated scalp.

Changes in the hair root are detectable as early as two days following irradiation and become progressively more manifest thereafter. These changes are confined to growing hair follicles and consist of a characteristic progressive atrophy of the entire hair bulb, which begins in the matrix portion. At the end of 10-14 days complete disintegration of the bulb occurs, leaving a severely tapered proximal tip of extracted hairs. Such hairs fall out at the end of three weeks. The roots of a proportionately few hairs recover during the first week, assume a structurally normal bulb, and continue to produce a hair; the hair shaft has a smaller diameter in a demarcated zone which can be identified, as judged by its distance from the bulb, as that portion of hair shaft produced during the time of radiation. Calculation of the percentage of growing hairs demonstrating morphological effects of irradiation may be done by examination of one hundred or more hairs manually extracted from areas of scalp exposed to different doses of radiation. Such examinations, repeated at intervals during the week following irradiation, reveal that the percentage of hairs showing changes increases linearly in relation to both time and to the dose of irradiation to which the hair roots were exposed.

"Nutritional Factors Influencing the Growth of Hair".

M. L. Ryder, Wool Industries Research Association, Leeds 6, England.

The amount and quality of food governs the weight of wool a sheep grows, and a poor diet reduces the length and diameter of the wool fibers. The addition of both protein and carbohydrate to the diet increases wool production. Carbohydrate is needed to provide energy for protein utilization, apart from releasing protein for wool growth. Carbohydrate is also essential for mitosis, and the importance of glycogen in the follicle has been amply demonstrated.

Cystine or methionine are essential for hair growth in many animals but sheep can readily synthesize cystine from sulfate. B vitamins are necessary agents for the growth of hair; pantothenic acid seems to be associated with the utilization of copper. Deficiency of copper causes loss of pigment, and in wool, a loss of crimp. Copper is thought to catalyze the oxydation of SH- to -S-S groups but it has not been possible to detect copper in the follicle either histochemically or with the use of Cu⁻⁶⁴. It is doubtful, however, if any of the dietary deficiencies reported to cause impaired growth are really specific.



The MODIFIED LANOLIN with new properties.

Modulan is the acetyl derivation of pure lanolin containing all the constituents of lanolin, modified by a unique treatment to impart NEW and VALUABLE PROPERTIES. (U. S. Patent No. 2,725,334)

Modulan forms clear solutions even in cold mineral oil and deposits hydrophobic, emollient films on skin and hair. These desirable protective films are waxy rather than tacky and are very pleasant to the touch.

Modulan is extremely hydrophobic—does not form greasy emulsions and is practically odorless. Because of its outstanding stability and compatibility with oil-in-water emulsions and with soaps and shampoos. Modulan is particularly recommended for use in creams, lotions, baby products, hair preparations, make-up, and ointments.

CLINICAL INVESTIGATIONS HAVE INDICATED THAT MODULAN IS HYPO-ALLERGENIC.



American Cholesterol Products
INCORPORATED
AMERCHOL PARK EDISON, NEW JERSEY

● ACETULAN™—a new chemical design for cosmetics.

Loss of hair due to poor diet does not seem to be by the formation of "brush ends", but apart from the thinning of the fiber there is a reduction in breaking strength. A poor diet retards follicle development in young animals, but it is doubtful if there is a permanent effect.

The larger the papilla is, the more blood vessels it contains and the greater is the diameter of the fiber. Variations on diameter of the fiber seem to be associated with the number of vessels in the dermal papilla as well as variations in the density of the surrounding net of vessels. A large follicle has an extensive supply because it is large; it is not this that makes it large.

Within a few minutes after the injection of cystine labelled with S-³⁵, radioactive particles appeared first immediately above the bulb, suggesting an entry at this level from the surrounding capillary net rather than through the papilla vessels. Soon after an injection of glucose labelled with C-¹⁴ the activity is in the bulb and not above it. There seems to be a rapid turnover of cystine in the body, but small amounts still enter the follicle up to 3 weeks after its injection.

"Changes in Hair Roots of the Human Scalp Following Therapy with a Folic Acid Antagonist".

Eugene J. Van Scott.

The loss of scalp hair following amethopterin (Methotrexate), unlike that due to either ionizing radiation or systemic diseases, is due to a breakage of the hair shaft and not to a falling out "by the roots."

Microscopic examination of unstained roots of hairs pulled from the scalps of patients receiving therapeutic doses of amethopterin reveals a transient but reversible injury to the hair bulb. There is a decrease in the diameter of the hair formed during the time of administration of the drug. When the administration of the drug is stopped the bulb recovers completely and again produces a hair shaft of normal diameter. As a result, hairs from patients who have received amethopterin have zones of constrictions. The degree of constriction corresponds to the dose of drugs employed and may be so severe that the shaft breaks at this point when the hair is pulled or even when it is combed or casually manipulated.

"Age, Sex and Genetic Factors in the Regulation of Hair Growth in Man; A Comparison of Caucasian and Japanese Populations".

James B. Hamilton, Dept. of Anatomy, State University of New York, College of Medicine at N.Y. City, Brooklyn, New York.

Techniques have been devised to provide repeatable quantitative measurements of hairs and their rate of growth in certain regions of the body. Using these methods, data have been obtained for each sex throughout the lifespan in Caucasian and Japanese populations. The standards constructed from these values can serve to assess some aspects of physiologic age, and to study endocrine status. They will also be valuable in gaining further understanding of the nature and interdependence of endocrine, aging, genetic, environmental and other regulatory factors.

Beard growth, in Caucasian as compared with Japanese males, was found to be considerably greater and values reached a peak at an earlier age. This was shown by measurements of weight of hair grown per day, and was associated with higher values in Caucasians for area of skin with coarse hairs and for number of such hairs per sq. cm. of a standardized region of the cheek. In a large series of Japanese females no instance of facial hirsutism was found in contrast to the high incidence reported for Caucasian women. Males of both ethnic

groups had similar values for the mean diameter of coarse hairs and of their component parts and for the percentage of gray hairs with advancing age.

Growth of axillary hair was also more pronounced in Caucasian than in Japanese males of comparable sex and age. The disparity between the two ethnic groups in values for axillary hair was even greater in females than in males.

These data for beard and axillary hair are in the same direction and extend previous reports of greater tendencies on the part of Caucasian males to develop coarse hairs on the external ears, to become bald and to develop acne.

As a rule some of the late sequelae of sexual maturation were among those which tended to occur more frequently, and to progress further in Caucasians than in Japanese. This principle seems to apply to the areas with coarse hairs in the axilla and beard as well as to the severe forms of common baldness, and it may apply to acne.

Secondary sex characters and certain sex-differing pathologic states failed to develop in men who did not mature sexually. The degree to which maintenance of these conditions, once fully-developed, depended upon gonadal secretions, differed among the items studied; these listed in decreasing order of dependence are the axillary hair, beard, and common baldness.

Under ordinary conditions these traits are dependent upon gonadal secretions for development, and in some instances for maintenance, but this endocrine stimulation tends to act in a trigger-like fashion. The extent to which these states develop, and even the occurrence of certain sex-selective pathologic states, is regulated chiefly by inheritance and aging. Studies of twins and members of large families, supplemented by comparisons of Caucasians and Japanese (including Japanese living in Tokyo, U.S., New York), delineate and emphasize the large measure of control exerted by genetic factors.

Endocrine indicators of the quantitative type employed in these studies are thus to be regarded as somewhat analogous to the comb in fowl, reflecting not only the nature and type of the existent endocrine stimulation but also the vitally-important responsiveness both of target organs and the organism.

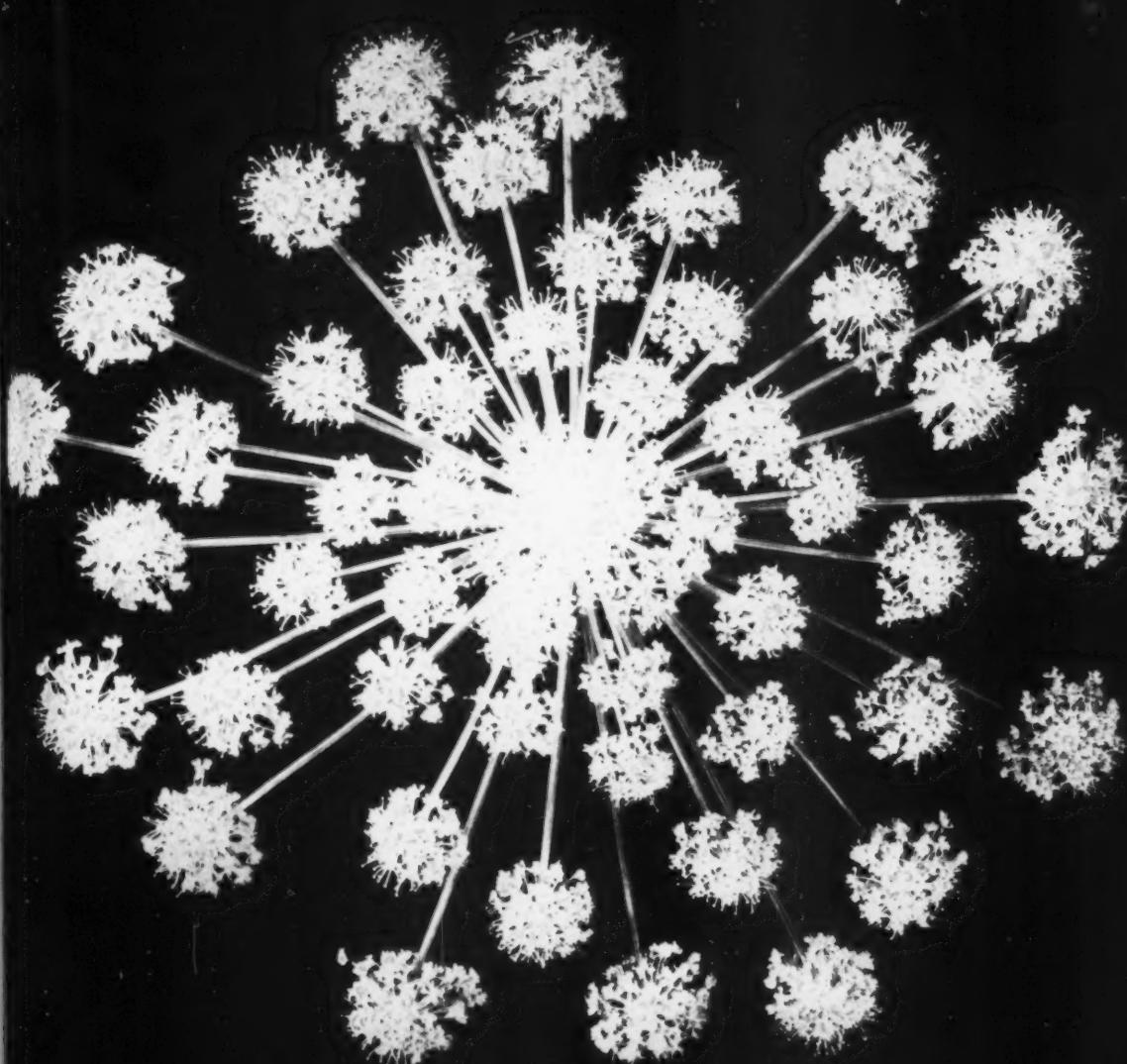
The interrelations of endocrine, hereditary and aging factors observed in studies of the beard seem relevant to growth of hairs in other regions such as eye-brow, nasal vestibule, external ear, and much of the body with the exceptions of scalp, (axilla, and pubis).

The mean age-curves for axillary hair conform more closely than those for beard to the waning of gonadal secretions, as judged by titers of urinary androgens and ketosteroids.

Secondary sex characters merge almost indistinguishably with male-selecting pathologic states like common baldness and the severe forms of acne. There are suggestions that this spectrum may extend to some of the more lethal male-selecting pathologic states and to the shorter duration of life in males than in females in man and other species. It is of considerable interest, therefore, that in some aspects the modes of control of piliary secondary sex characters seem to be analogous, and may provide insight, to those of certain sex-selecting pathologic states.

Abstracts to be concluded in January

Sometimes I wonder if our Creator in his infinite compassion balanced the day with night so that his creatures might take time out to grow. The darkness descends, the treadmill of self delusion stops and a man can pause for perspective.—Jacque Du Vall.



Specialists in Aromatic Chemicals,
Perfume Compounds & Flavors for all purposes
Esrolko Ltd.
Dubendorf-Zurich, Switzerland, founded 1898

ESROLKO



AERO SCRIPTS

Jack Pickthall*



August 1957 was a great month for Anglo American relations, at any rate, in the Cosmetic field. The British Society had the very great pleasure of entertaining their American counterpart at a cocktail party in London. This was a very informal affair where members of each Society, together with their Ladies, got to know one another in a friendly and happy atmosphere. I had the further honour and pleasure of personally entertaining Ed de Navarre and his charming wife and daughter together with Walter Wynne and his no less charming daughter. Later, my wife and I enjoyed a very pleasant evening with those most friendly of people, the Striases. However, the story inasmuch as it concerns Aerosols, started in Paris a few days earlier.

On the 25th of July, the "Aerosol Age" of that month appeared on my desk. In it was a slashing attack on my "Unprotected Glass Aerosols" article. Now I am ashamed to say, I had never heard of Maria V. Wiener and at first glance I wondered whether I should cancel my visit to Paris where I was due to sit on an International Committee designed to investigate the formation of a World Federation of Cosmetic Chemists. Having delved beneath the veil of Mrs. Wiener's maths and placed her comments in their true perspective, I was able to proceed to Paris with little more than an itching to get cracking with an answer.

I made the journey with our worthy Secretary Mr. Fred Riley and his wife. Our meeting was on Monday the 29th of July and in the evening there was to be a Banquet at St. Germain. As the American contingent were taking two coaches to St. Germain, the Rileys and I cadged a lift. I was sitting knee to knee with Audrey Langdon and this young lady remarked casually to me that we were "only waiting for Mrs. Wiener" (an injustice, because Mrs. Wiener was already on the coach). Naturally my ears spread at an even wider angle and a few innocent questions indicated to me that Maria V. Wiener was in fact on the coach. Whether to hide or take the offensive? With hand over my identification badge, I presented myself to Mrs. Wiener. One short moment of embarrassment and we were friends. In point of fact, we sat at 'top table' together and spoke of many things, always, I am afraid, coming back to Aerosols. Dancing between courses was on the menu and I am sure Mrs.

Wiener had cause to regret her article because dancing is not my strong point.

Later in London I met Mrs. Wiener many times and the Americans took a fiendish delight in introducing me to Mrs. Wiener. She is the most charming of persons and we became great friends. I cannot resist telling one small story. Mrs. Wiener, Freddie Wells, my brother (who took the Aerosol photographs) and I were chatting when someone came up to us and with hands on Mrs. Wiener's and my shoulder said, "I hope these two people will not start throwing uncoated glass aerosols at one another." To which Freddie in his imitable style replied, "No, this is a friendly gathering and the weapons will be restricted to beverage bottles." This neatly summarizes all I feel on the subject. Now it has always astounded me that my humble article has caused such interest, argument and finally, criticism. Really all I wanted to show was that if a newcomer into the Aerosol field read the literature, he might well select a quoted formula, place it in an uncoated glass aerosol bottle and with misplaced confidence, put the article on the market. Many writers had used the argument that beverage bottles contain

pressures higher than those employed in glass aerosols and are therefore more dangerous. In my original article, I showed why such arguments are without foundation on both theoretical and practical grounds. To emphasize my points, I took photographs of both aerosols and beverage bottles at the moment of breaking. I must say I have been gratified at the reaction from people in many countries including America and my gratification has been reinforced by the general comments I have received after the appearance of Mrs. Wiener's article. My one disappointment was Mr. Reed being impressed with Mrs. Wiener's "rather solid foundation of thermodynamics."

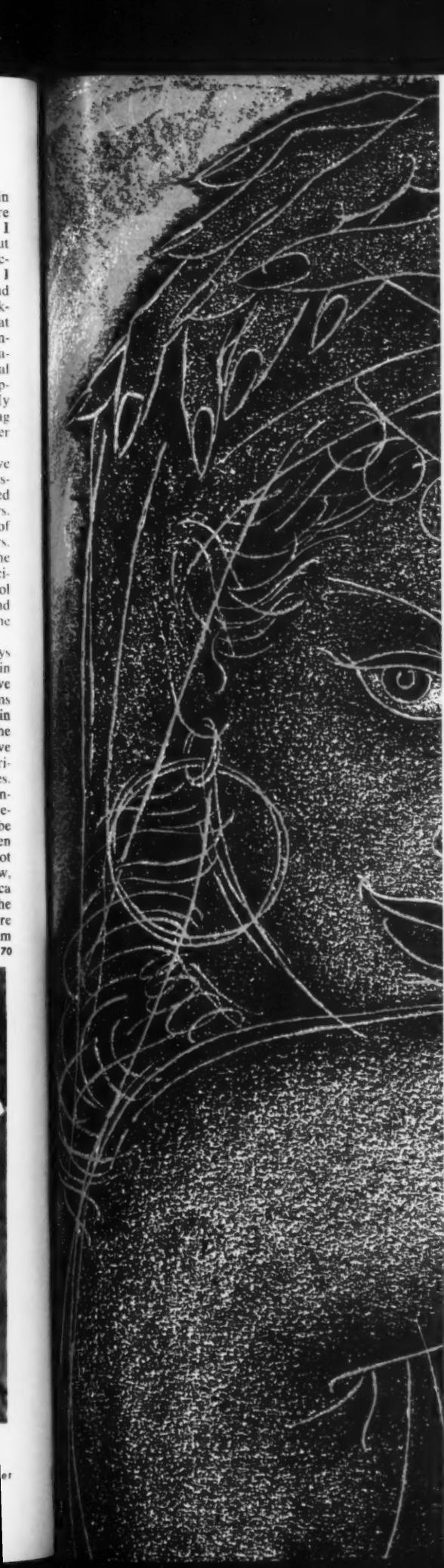
As the whole subject appears to have assumed the proportions of a major issue, it might be of interest if I discussed some of the objections raised by Mrs. Wiener. I do this in the friendliest of ways and in the knowledge that Mrs. Wiener will accept my comments in the way I have accepted hers. I have, incidentally, sent an answer to "Aerosol Age" covering some 7,000 words and hope to supplement this effort with some more photographs.

In the first place, Mrs. Wiener says I am out of step with researchers in America. I can tell her I definitely have the sympathy of some American firms and workers, and that many people in Europe absolutely refuse to handle the uncoated bottle, not because they have read my article, but simply from experimental evidence in their own laboratories. Further, she suggests that the filling mentioned under my "a" formula is not related to the uncoated glass aerosols to be found on the American market. When writing my article, I really could not have commented on that point. Now, after buying such articles from America I can say with some confidence that the American products I have seen are more dangerous than even my filling "b". From

continued on page 70



Jack Pickthall, Mrs. Wiener and Geoffrey Pickthall at London meeting



*"A Book of Verses underneath the Bough,
A jug of Wine, a Loaf of Bread—and Thou
Beside me singing in the Wilderness—
Oh, Wilderness were Paradise enow!"*

12th verse of *The Rubaiyat*
of Omar Khayyam

Read at random any portion of "The Rubaiyat"
and you'll find yourself soon captivated by
its strange, hypnotic spell. In this moody,
philosophical classic, Omar Khayyam—astronomer,
mathematician and weaver of words—left for all
posterity a creation of delicate imagery and
imperishable beauty.

FRITZSCHE BROTHERS, INC.

76 NINTH AVENUE, NEW YORK 11, N.Y.

BRANCH OFFICES AND STOCKS: ATLANTA, GA., BOSTON, MASS.
*CHICAGO, ILL., CINCINNATI, OHIO, LOS ANGELES, CAL.
PHILADELPHIA, PA., SAN FRANCISCO, CAL., ST. LOUIS, MO.,
MONTREAL AND *TORONTO, CANADA, AND *MEXICO, D. F.
FACTORY: CLIFTON, N.J.



EST. 1871



AERO SCRIPTS

Jack Pickthall*



August 1957 was a great month for Anglo American relations, at any rate, in the Cosmetic field. The British Society had the very great pleasure of entertaining their American counterpart at a cocktail party in London. This was a very informal affair where members of each Society, together with their ladies, got to know one another in a friendly and happy atmosphere. I had the further honour and pleasure of personally entertaining Ed de Navarre and his charming wife and daughter together with Walter Wynne and his no less charming daughter. Later, my wife and I enjoyed a very pleasant evening with those most friendly of people, the Strianses. However, the story inasmuch as it concerns Aerosols, started in Paris a few days earlier.

On the 25th of July, the "Aerosol Age" of that month appeared on my desk. In it was a slashing attack on my "Unprotected Glass Aerosols" article. Now I am ashamed to say, I had never heard of Maria V. Wiener and at first glance I wondered whether I should cancel my visit to Paris where I was due to sit on an International Committee designed to investigate the formation of a World Federation of Cosmetic Chemists. Having delved beneath the veil of Mrs. Wiener's maths and placed her comments in their true perspective, I was able to proceed to Paris with little more than an itching to get cracking with an answer.

I made the journey with our worthy Secretary Mr. Fred Riley and his wife. Our meeting was on Monday the 29th of July and in the evening there was to be a Banquet at St. Germain. As the American contingent were taking two coaches to St. Germain, the Rileys and I cadged a lift. I was sitting knee to knee with Audrey Langdon and this young lady remarked casually to me that we were "only waiting for Mrs. Wiener" (an injustice, because Mrs. Wiener was already on the coach). Naturally my ears spread at an even wider angle and a few innocent questions indicated to me that Maria V. Wiener was in fact on the coach. Whether to hide or take the offensive? With hand over my identification badge, I presented myself to Mrs. Wiener. One short moment of embarrassment and we were friends. In point of fact, we sat at 'top table' together and spoke of many things, always, I am afraid, coming back to Aerosols. Dancing between courses was on the menu and I am sure Mrs.

Wiener had cause to regret her article because dancing is not my strong point.

Later in London I met Mrs. Wiener many times and the Americans took a fiendish delight in introducing me to Mrs. Wiener. She is the most charming of persons and we became great friends. I cannot resist telling one small story. Mrs. Wiener, Freddie Wells, my brother (who took the Aerosol photographs) and I were chatting when someone came up to us and with hands on Mrs. Wiener's and my shoulder said, "I hope these two people will not start throwing uncoated glass aerosols at one another." To which Freddie in his inimitable style replied, "No, this is a friendly gathering and the weapons will be restricted to beverage bottles." This neatly summarizes all I feel on the subject. Now it has always astounded me that my humble article has caused such interest, argument and finally, criticism. Really all I wanted to show was that if a newcomer into the Aerosol field read the literature, he might well select a quoted formula, place it in an uncoated glass aerosol bottle and with misplaced confidence, put the article on the market. Many writers had used the argument that beverage bottles contain

pressures higher than those employed in glass aerosols and are therefore more dangerous. In my original article, I showed why such arguments are without foundation on both theoretical and practical grounds. To emphasize my points, I took photographs of both aerosols and beverage bottles at the moment of breaking. I must say I have been gratified at the reaction from people in many countries including America and my gratification has been reinforced by the general comments I have received after the appearance of Mrs. Wiener's article. My one disappointment was Mr. Reed being impressed with Mrs. Wiener's "rather solid foundation of thermodynamics."

As the whole subject appears to have assumed the proportions of a major issue, it might be of interest if I discussed some of the objections raised by Mrs. Wiener. I do this in the friendliest of ways and in the knowledge that Mrs. Wiener will accept my comments in the way I have accepted hers. I have, incidentally, sent an answer to "Aerosol Age" covering some 7,000 words and hope to supplement this effort with some more photographs.

In the first place, Mrs. Wiener says I am out of step with researchers in America. I can tell her I definitely have the sympathy of some American firms and workers, and that many people in Europe absolutely refuse to handle the uncoated bottle, not because they have read my article, but simply from experimental evidence in their own laboratories. Further, she suggests that the filling mentioned under my "a" formula is not related to the uncoated glass aerosols to be found on the American market. When writing my article, I really could not have commented on that point. Now, after buying such articles from America I can say with some confidence that the American products I have seen are more dangerous than even my filling "b". From

continued on page 70



Jack Pickthall, Mrs. Wiener and Geoffrey Pickthall at London meeting



Rubáiyát

RICH. EXOTIC . . . AN INSPIRED FRAGRANCE

by **FRITZSCHE**

Taking our cue from the renowned Persian classic which inspired its name, we have endeavored to fashion a fragrance as faultlessly composed as is "The Rubaiyat" itself. This, indeed, is one of our proudest and most provocative creations. Characteristically oriental, it is warm, luxurious and gently persuasive. Citrus-woody components provide its base and to this have been added aldehydic modifiers containing true rose and jasmine absolutes with natural animal tinctures for fixation. Delicate floral-spice notes and a deceptive "green" character lend the final touches to this highly complex, beautifully balanced masterpiece. It is a fragrance destined--we are sure--to give rich, long-lasting enjoyment to countless users. May we suggest that you be sure to examine RUBAIYAT before making final commitments on any new additions to your perfume-cosmetic line presently under consideration. Samples, of course, are freely available to recognized manufacturers upon request.

**FRITZSCHE
BROTHERS, INC.**

76 NINTH AVENUE, NEW YORK 11, N.Y.

BRANCH OFFICES AND STOCKS: ATLANTA, GA., BOSTON, MASS.,
CHICAGO, ILL., CINCINNATI, OHIO, LOS ANGELES, CAL.,
PHILADELPHIA, PA., SAN FRANCISCO, CAL., ST. LOUIS, MO.,
MONTREAL AND TORONTO, CANADA, AND MEXICO, D. F.
FACTORY: CLIFTON, N.J.

EST. 1871



*"A Book of Verses underneath the Bough,
A jug of Wine, a Loaf of Bread—and Thou
Beside me singing in the Wilderness—
Oh, Wilderness were Paradise enow!"*

*12th verse of The Rubaiyat
of Omar Khayyam*

Read at random any portion of "The Rubaiyat"
and you'll find yourself soon captivated by
its strange, hypnotic spell. In this moody,
philosophical classic, Omar Khayyam—astronomer,
mathematician and weaver of words—left for all
posterity a creation of delicate imagery and
imperishable beauty.

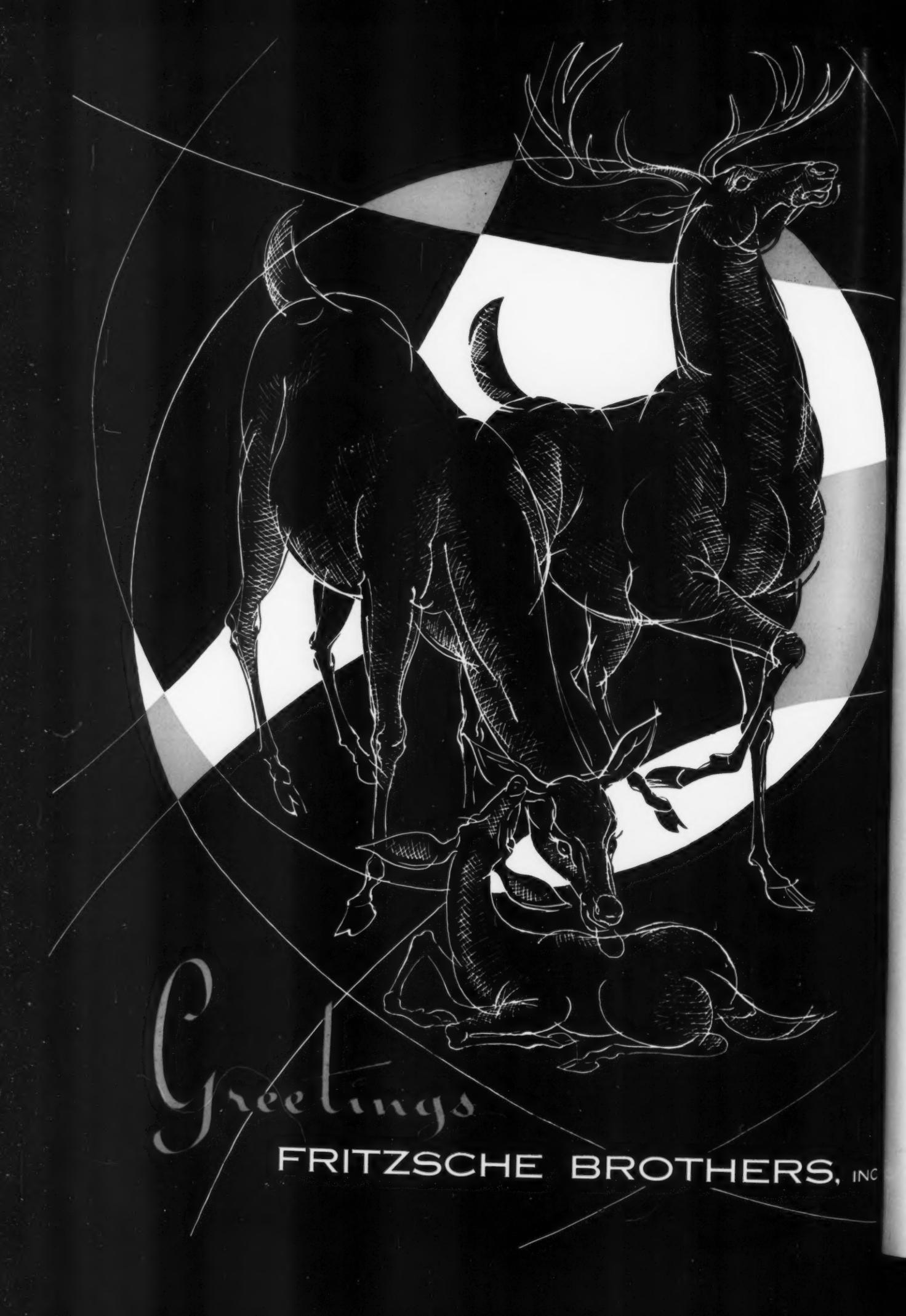
FRITZSCHE BROTHERS, INC.

76 NINTH AVENUE. NEW YORK 11. N.Y.

BRANCH OFFICES AND STOCKS: ATLANTA, GA., BOSTON, MASS.
*CHICAGO, ILL., CINCINNATI, OHIO, *LOS ANGELES, CAL.
PHILADELPHIA, PA., SAN FRANCISCO, CAL., ST. LOUIS, MO.
MONTREAL AND *TORONTO, CANADA, AND *MEXICO, D. F.
FACTORY: CLIFTON, N.J.



ESTD. 1871



Greetings

FRITZSCHE BROTHERS, INC.



MORRIS B. JACOBS, Ph. D.

The Chicken Flavor

Some 18 carbonyl compounds have been shown to be present in the volatile portion of chicken flavor

Considerable and increasing interest has been displayed in the compounds responsible for the natural flavor of a large variety of different foods. This interest has been shown by work, studies, and investigations not only leading to the isolation, capture, and concentration of such flavors but also in the restoration of the natural flavor either by return of the isolated natural flavor concentrate to the food product in question or by the activation of a flavor precursor by a flavor producing enzyme. Various methods of approach have been used such as flash vaporization which was developed on a commercial scale, extraction methods, distillation methods, paper chromatography, and more recently vapor-phase or gas chromatography. Some of the food flavor products discussed in past issues were fruit flavors such as apple, strawberry, and raspberry flavors, broth flavor, onion and garlic flavors, restorations of vegetable flavors by enzyme treatment, and many similar topics. By this series this section of the American Perfumer and Aromatics has attempted to keep its readers abreast of such developments.

At the 132nd meeting of the American Chemical Society that was held in New York City from September 8 to 13, as discussed in last month's issue of this section, a number of papers were presented which were of interest to flavor chemists and flavorists. In addition to those there was one which deserves more detailed description.

A paper on the volatile carbonyl compounds of cooked chicken, specifically, the compounds obtained by air entrainment by E. L. Pippen, M. Nonaka, F. T. Jones, and F. Stitt of the Western Regional Research Laboratory, Western Utilization Research and Development Division, U. S. Department of Agriculture, Albany, Calif., was read before the Division of Agricultural and Food Chemistry of the ACS by Mr. Pippen.

He explained that he and his collaborators were try-

ing to find out what makes a chicken dinner smell and taste so good. He and his co-workers felt that the production of poultry products having stable and optimum flavor may be aided by obtaining new information about the fundamental causes of flavor and off-flavor in chicken. They hope that they can determine just which components are required to restore the flavor of poultry products that now lose some of their gustatory appeal in the course of processing. To obtain this information studies have been in progress in this U. S. Department of Agriculture Laboratory for a number of years.

Complexity of Flavor

One of the facts established by this work is that the savory aroma and flavor of both roast and cooked chicken is very complex as established by the present work discussed by Pippen and his past work. Thus, in this instance some sixteen compounds that all belonged to the group of chemical compounds known as carbonyl compounds were definitely identified as being components of such flavor and a number of others have been indicated as possibly being present also.

Pippen pointed out that there are important volatile flavor components that contribute to poultry flavor as evident to all who have smelled such savory aroma when the poultry is being cooked but that the chemistry and technology of such volatile poultry flavors were virtually unexplored. Consequently research for increased information might be able to disclose just the substances responsible for good flavor or for off-flavor. Such knowledge would in turn enable investigators to determine whether or not a stable, typical volatile poultry flavor could be recovered by processing and then be utilized for fortifying the flavor of certain poultry products that have suffered loss of flavor as a result of the steps to which they were subjected during processing.

Isolation of Components

It was noted that the compounds comprising the flavor could be isolated from chicken simmered in water under ordinary cooking conditions but by the introduction of air during cooking a greater yield and thus a better idea of the compounds present could be obtained. The number of compounds by either method proved that the flavor was very complex.

In this particular investigation, air was passed through a simmering mixture of chicken in water for 20 hours and the gases and volatile compounds evolved were subsequently passed through a solution of 2,4-dinitrophenylhydrazine. By this procedure 7.8 grams of 2,4-dinitrophenylhydrazone were recovered from 31.4 kilograms (69 pounds) of chicken.

Fractionation of the 2,4-dinitrophenylhydrazone resulted in the separation of 18 compounds. Among those conclusively identified were:

Biacetyl (diacetyl)
Acetone
Acetaldehyde
Propionaldehyde
Butyraldehyde,
Valeraldehyde
Caproaldehyde
Caprylaldehyde
Pelargonaldehyde
2-Penten-1-al
2-Hexen-1-al
2-Hepten-1-al
2-Decen-1-al
2-Undecen-1-al

that is, the compounds isolated were biacetyl, acetone, the normal aliphatic aldehydes containing 2, 3, 4, 5, 6, 8, and 9 carbon atoms, and the normal aliphatic 2-en-1-als containing 5, 6, 7, 10, and 11 carbon atoms. They also found evidence that indicated the presence of the 2,4-dinitrophenylhydrazone of ethyl methyl ketone, and of three 2,4-dien-1-als.

They were able to determine the relative amounts of these compounds in the mixture they obtained and they expect that the results will provide information which will be useful in establishing the role that these carbonyl compounds play in chicken flavor.

Pippen concluded, "These studies represent a definite step forward in the effort to identify systematically the chemicals responsible for the aroma of cooked chicken. The finding of 18 compounds in just one chemical family indicates that volatile chicken flavor is a complex mixture and that the characteristic aroma of cooked chicken may depend upon a critical blend of many components."

Prior Work

In this connection it may be well to recall some of the prior work done by Pippen in this field. At the 16th annual meeting of the Institute of Food Technologists which was held in St. Louis in May, 1956, he presented a paper on a chemical study of the volatile nitrogen and volatile sulfur fractions of chicken. He found that the nitrogen present in a chicken broth distillate consisted of ammonia and that the concentrations found were of the order of 37 parts per million. The evaluation of the fractionated distillate by a taste panel showed that ammonia was of minor importance as a flavoring substance in chicken flavor and that the volatile flavor was associated primarily with the neutral or acidic portions.

He found that sulfur was present in chicken broth distillate in concentrations of the order of 0.5 to 3 micrograms per milliliter. In freshly prepared broth distillate, the sulfur was present as sulfide for there was good

agreement between the total and sulfide sulfur. At room temperature the sulfide sulfur in the distillate was oxidized relatively rapidly, some 79 per cent in 48 hours, to nonsulfide form. He also found that the volatile sulfur evolved when chicken was cooked in water consisted only of the sulfide form. During heating and reheating of chicken, hydrogen sulfide was evolved continuously even after prolonged heating or exhaustive steam distillation.

Still earlier work was described in detail in a paper by E. L. Pippen, Agnes A. Campbell, and Iva V. Streeter, on the origin of chicken flavor, *J. Agr. Food Chem.*, 2, No. 7, 365 (March, 1954). This investigation concerned the role that various portions of the chicken played in flavor development.

These investigators found that the relative contribution of gross parts or fractions of the carcass to flavor broth showed that fat contributes to the aroma of the broth, but is in other respects of minor importance to its flavor. The flesh portion was a better source of flavor than bones, skin, or a composite of all three parts. The precursors of chicken flavor were readily extracted from cut-up raw chicken meat by cold water.

Source of Chicken Flavor

D. W. Peterson of the University of California at Davis, Calif. recently discussed the source of chicken flavor in a paper presented at a Symposium on the chemistry of natural food flavors that was sponsored by the National Academy of Sciences—National Research Council for the Quartermaster Food and Container Institute for the Armed Forces and Pioneering Research Division of the Quartermaster Research & Engineering Center in May, 1957.

His work indicated that the only fractions of the chicken that produced a typical chicken aroma and flavor were those from muscle, with leg muscle giving a greater amount of aroma and flavor than breast muscle. Skin gave only a very slight odor and flavor reminiscent of chicken while blood, plasma, and fat gave virtually no odor or flavor.

Peterson concluded that a concentrate of chicken flavor precursors can be prepared by water extraction of lyophilized, lipid-free chicken muscle. Fat itself, appeared to contribute little to the flavor of chicken broth, but in some manner contributed to its aroma.



"Gee, Pop, are you giving Mom that wonderful perfume you couldn't possibly afford?"



*a new answer
to an old problem*

The problem of keeping pace with "styling" in cosmetics is especially acute with regard to fragrance.

Here at *Synfleur*, our skilled perfumers and chemists have developed a number of valuable new lipstick aromatics which are unusually effective solutions to that problem.

We shall be glad to incorporate recommended *Synfleur* fragrances in your lipstick mass and submit finished lipstick samples for your own determination of their appeal and value. There is no obligation.

Synfleur

**SCIENTIFIC LABORATORIES, INC.
MONTICELLO, N. Y.**

ATLANTA • DETROIT • NEW YORK • HAVANA • RIO DE JANEIRO • MEXICO, D. C.
Chicago • Melbourne • Burma • Hong Kong • Bogota • San José
Ciudad Trujillo • Guayaquil • Guatemala City • Calcutta • Wellington
Managua • Panama • Asuncion • Manila • San Salvador • Montevideo

CANADA: Herman & Leal • 637 Craig Street West • Montreal, Quebec



AEROSOL PRODUCT DEVELOPMENT

- Consulting
- Research
- Testing

The Safest Path
to Successful Products

THE REED RESEARCH CORP.

formerly Aerosol Process Co., Inc.

Winston H. Reed, Ph.D.
President and Technical Director

Mill Street, Shelton, Conn.
Phone Ansonia-Derby
REgent 5-4858

CONFIDENTIAL

UNBIASED

A Company
devoted exclusively
to development
and research on Aerosols

Givaudan-Delawanna Annual Fall Reception and Cocktail Party

Upwards of three hundred members of the soap, perfume, cosmetic and allied industries gathered at the University Club in New York on November 13, to attend the annual Fall reception and cocktail party tendered by Givaudan-Delawanna, Inc. The reception was held on the occasion of the visit to the United States of

Andre Givaudan of L. Givaudan & Cie., S.A., Geneva, and his son, Leon Givaudan of Companhia Brasileira Givaudan, São Paulo. Both visitors enjoyed the opportunity of meeting with eminent members of the industry and discussing with them current problems encountered both here and abroad.



Jacques Ploschak, Givaudan-Delawanna, Inc.; Maurice Meunier, Les Parfums de Dana; Ed. Morgan, Jr., Lever Bros.; Pierre Boullette of Givaudan, President of the American Society of Perfumers; and Dr. P. S. Heilperin, Coty Products Corp.



A happy group at the recent Givaudan Cocktail Party includes R. Goldemberg, Coty Products Corp.; Marc See, Charles of the Ritz; S. Lakhovsky, Coty Products Corp.; Jean Martin, Martin-Valer; Andre Wick, Cheramy, Inc.; and Pierre Boullette, Givaudan-Delawanna, Inc.



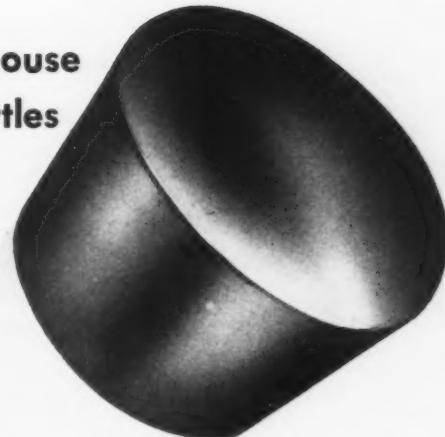
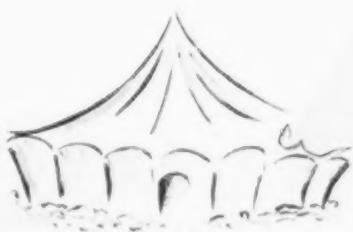
A general view of the Givaudan-Delawanna Cocktail Party and Reception attended by over 300 members of the soap, perfume, cosmetic and allied industries.

RICHFORD
from **RICHFORD**'s magic storehouse
of closures and caps for all stock bottles
or your own private molds

the **BIG** top

Straight side flush fitting caps, size #18-415 and #20-415 to fit 2 oz. and 4 oz. stock bottles available from leading glass manufacturers.

In black phenolic, colored urea (your choice), or in the well-known Goldcôte® and Silvacôte® vacuum metalized finishes.



and sparkling new futuras

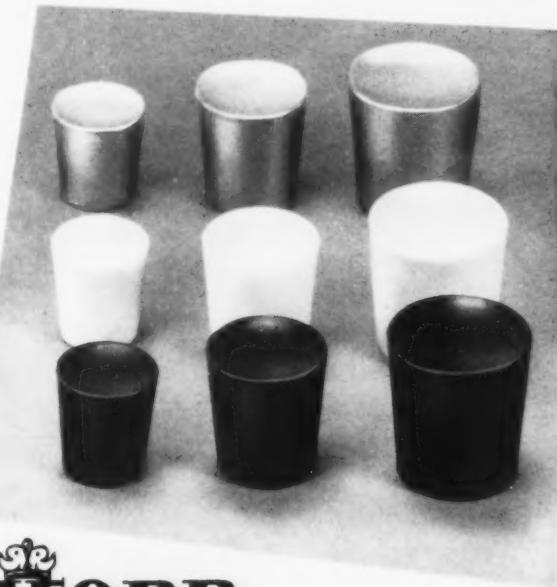
Tapered sides, concave tops, perfect proportions identify these as "CAPS WITH A FUTURE" — made in #'s 10-425, 13-415, 15-415, 18-415, and 22-415 standard sizes, in black phenolic, colored urea (your choice), or in the well-known Goldcôte® and Silvacôte® vacuum metalized finishes.

ALL RICHFORD CLOSURES
ARE AVAILABLE
FROM STOCK.

WRITE FOR
SAMPLES AND PRICES.

RICHFORD
C O R P O R A T I O N
3618 Oceanside Rd., Oceanside, N. Y.

N. Y. Showrooms
Empire State Building
350 Fifth Ave., N. Y.





Packaging and Promotion



1.



2.



3.

1. SCHIAPARELLI

This set of three boxes, hanky, glove and 6 section hose box, each with Schiaparelli sachet, is satin-tied as a sales stimulating gift item. The boxes are satin, quilted with gold lurex thread, and available in pink, turquoise, and antique white. The suggested retail price for a set of three is \$5.00, and each box is available individually at \$1.75 each.

2. JOHN H. BRECK

John H. Breck, Inc. is the first to package permanent wave neutralizer in an internally coated Bracon polyethylene tube. The Breck On-Rod Neutralizer tubes which contain four fluid ounces are designed for the professional operator and made by the Bradley Container Corp. They are printed with Breck's identifying typography in gray and red inks on white polyethylene. The Breck Enduring Wave units are displayed at beauty shops in a specially designed plastic display and dispensing tray holding four tubes and bottles in an upright position.

3. BRISTOL-MYERS

The development of liners which coat the inside of polyethylene bottles and prevent permeation of certain product ingredients has made possible what has been called the first truly new dentifrice package in 60 years. "Ipana Plus", Bristol-Myers Company's new dental formula, is packaged in this custom-shaped, Wedgewood-blue polyethylene bottle which sits on its shoulders with the neck at "seven o'clock" position to assure immediate dispensing. Product name is silk screened red and white.

4. LENTHERIC

Lentheric has changed the name of their famous Boquet to Cologne, and is presenting it in a new "crystal prism" bottle. The cologne is available in five fragrances, Tweed, Adam's Rib, Miracle, Shanghai and Red Lilac. The lines of the "crystal prism" bottle are clean, sleek and modern. A prismatic effect is achieved by indentations on reverse sides in the front and back. These indentations also make the bottle easy to hold.



4.



5.



6.

5. TONI

Adorn Invisible Hair Spray by Toni in attractive embossed wrap designed and produced by Donrico, Inc. A white all over wrap, blind embossed, has blue reverse panels on front and back of aerosol spray container. A gold ribbon effect band across the front of the gold edged blue oval is surprinted with black ink. Another panel in the back of the container gives instructions for use. The entire wrap is alcohol proof, insuring a clean container at all times.

6. TUSSY

Tussy launches new packaging for Wind and Weather hand cream and lotion for this year's half-price sale. Beginning Dec. 26th new Wind and Weather jars and bottles will appear throughout most of the country. In the East, packaging currently featured by the company will be sold. The new packaging is distinguished by the "hourglass" or hexagonal shape of the faceted bottle, and the graceful contour shape of the turquoise, white, blue and gold labels, back and front. The bottle, holding 10 oz., is topped with a turquoise plastic cap.

7. HELENE CURTIS

Helene Curtis is now shipping Enden Dandruff Treatment Shampoo, both cream and liquid form, in a new 1 dozen corrugated shipper. It is decorated in the same striking motif of black, bright coral and pale blue with white lettering that is featured on the display boxes of the products. This shipper is designed to obtain the maximum impact in stores where shippers are often stacked for display.

8. PRINCE MATCHABELLI

Prince Matchabelli has added a new item to the Abano line of fragrant bath and after-bath grooming aids, Abano Stick Deodorant. Containing hexochlorophene in an alcohol base, Abano Stick Deodorant is reported to nullify skin-surface bacteria on application and leave an invisible film on the skin to prevent the forming of new bacteria. The foil wrapped stick is contained in a buff-colored glass jar, with brown lettering, sea-blue screw-cap and sea-blue seahorses, the identifying symbol of the Abano line.



7.



8.



PRODUCTS & IDEAS

PERFUME ATOMIZER—1

The Richford Corp. has just introduced a new all-purpose Aerosol perfume atomizer known as Touch-N-Spray. As shown, this practical, light-weight plastic container is equipped with a long, gold-metal cap that insures against accidental discharge and adds to its sales appeal.

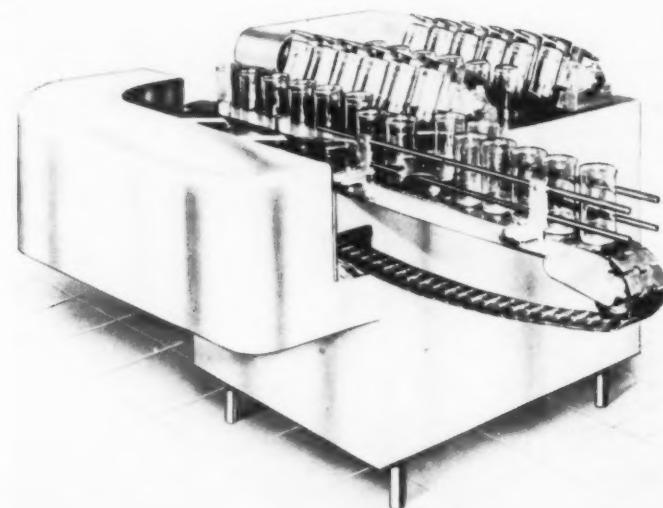
1.



CONTAINER CLEANER—2

A roll-over cleaner that is said to positively remove glass chips, dust and dirt from containers by turning them over 180 degrees and cleaning by air blast is now available from The Filler Machine Co. The unit, which saves trouble for the manufacturer by providing more efficient cleaning, through the turn over method, positions containers into multiple lines prior to

2.



inverting by the first roll-over pocket. A vacuum exhaust mounted under the table carries away the foreign matter and cleaned containers are turned upright by the second roll-over pocket to be positioned under filling machine nozzles or on a right angle conveyor belt. Cleaning speeds are from 40 to 200 containers per minute.

TEFLON TAPE

A new form of Teflon has been added to the line of Teflon products supplied by the Chicago Gasket Co. This is a pressure sensitive Teflon adhesive tape. The special silicone adhesive used will reportedly provide a firm bond with high peel strength at temperatures up to 500°F. The tape is available in widths up to 2", in 36 yard rolls of .006" thickness and 18 yard rolls of .013" thickness. Both types can also be supplied in 12" sheets.

WATER-IN-OIL EMULSIFIER

Through its ability to form unusual thermostable emulsions, a new water-in-oil emulsifier announced by Morningstar, Nicol, Inc., opens new horizons for the imaginative formulating chemist. The product, Emocithin, already has wide use in Europe. Whereas

most emulsifiers are of the O/W type, Emocithin is an emulsifier destined exclusively for the preparation of W/O emulsions, where aqueous phases are finely dispersed in continuous oil or fat phases of vegetable, animal, or mineral oils. Emocithin reportedly produces W/O emulsions which will not separate at temperatures up to 200° F (per ASTM Steam Emulsion Test D 157-36).

SELF-SANITIZING PAINT ADDITIVE

Nuozen, a self-sanitizing paint additive with dual killing action against fungi and bacteria, has been introduced by Nuodex Products Division of Heyden Newport Chemical Corp. It is reported that the new self-sanitizing additive is effective in most types of paint.

PRIVATE MOLD BOTTLES—3

A set of private mold bottles has been designed by the Hazel-Atlas Division of Continental Can Co. The crystal clear glass is scooped at each corner in sweeping lines that widen alternately upward and downward. The design's off-center effect gives the bottles an unusual flowing appearance. The bottles range in size from 1 to 16 ounces.

3.





Romance!

In the cosmetics industry, romance is probably the greatest single sales-motivating force. And the cosmetics chemist knows that fragrance plays a dominant part in her selection of cosmetics.

That's why so many manufacturers who are meticulous about fragrance use Verona extenders and developers to bring out the latent brilliance of the compound . . . and save money in the process!

Send for samples of some of the Verona specialties listed at the right — and see for yourself how effectively they help you hit — and hold — the high notes!

A FEW VERONA SPECIALTIES

RESEDALIA, an acetal.

VERONOL, an aldehyde.

CYCLAMAL, cyclamen aldehyde.

ROSANOL, an acetal.

PHENYL ACET ALDEHYDE PHENYL GLYCOL ACETAL
TERTIARY BUTYL DI METHYL CUMARIN

BERGAMOT SYNTHETIC, P-1104.

FLOWER OIL WHITE LILAC.



VERONA PRODUCTS BUILD SALES FOR *Your* PRODUCTS

VERONA CHEMICAL COMPANY Plant and Main Office: 26 Verona Avenue, Newark, N. J. 1210 Rosedale Avenue, Chicago, Ill.



ARGENTEUIL—SEINE—France

ROURE



NEW YORK LABORATORIES

SINCE
1820



GRASSE—France

DUPONT



Roure-Bertrand Fils, Grasse, and Justin Dupont, Argenteuil, France, as well as their facilities in North Africa, India, the Far East and South America, have for decades been prime processors of basic ingredients for the perfumers of the world.

Their creative genius is attested by the many fragrances that are proven international successes. These formulations have earned for our laboratory technicians both here and abroad an inspiring accolade of confidence.

Roure-Dupont, Inc. technical staff is in a position to put its vast international facilities and know-how at your disposal.

ROURE-DUPONT, INC.

Sole Agents for the United States and Canada for
ROURE-BERTRAND FILS et JUSTIN DUPONT, Paris, Grasse

CHICAGO HOLLYWOOD
510 North Dearborn 5523 Sunset Blvd.

366 Madison Avenue, New York

Alpine

ROSAL

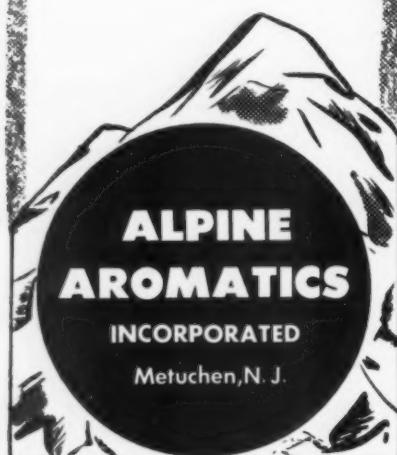
NEW ROSE
CHEMICAL

OUTSTANDING FOR
TRUE NATURAL
REPRODUCTIONS

POWERFUL
& STABLE IN
SOAP



Another Fine
Product of
Alpine Research.



Aerosol NOTES

by Dr. Winston H. Reed

On the Ski-Tow

Will somebody please pass the aerosol ski wax, and don't be so slow about it! After all, twenty-six years of formulation work can't be exactly considered speed. Ski-topped cars on the parkways and skifilled Grand Central brings strongly to mind the fact that hope for an easier method for the application of ski wax led Rotheim to the concept of aerosol packaging, in the nineteen thirties. It is also interesting that a really dependable ski wax formulation still represents a hickory tough formulation problem.

The development story and market history of wax products, particularly ski wax, should be one of the most thoroughly read lessons for the newcomer in this industry. Here you will learn of nearly all the typical problems met with in aerosol packaging and some special ones. Wish we had time here to recount some of these but must get back to the ski-tow while it's still running. The product is used both indoors and out so should have sufficient pressure to perform satisfactorily over a broad temperature range. The wax concentration should be high enough to give economic value, the wax should not gel out at temperatures around freezing, should not clog valves or soften valve components. All of these troubles and more have beset some ski wax formulations.

There may be some successful packages on the market, but to my knowledge there have been no outstanding market successes in this area, as yet. So, when you pass the wax, make sure that it's a really top quality product. Give it adequate promotion and you'll have a real market success.

Aerosol Valves

New valve developments keep coming but the story of the minor innovations, I do not believe, is half as important as the steady improvement in quality control of present valves. I think the valve industry in general have a record they can be proud of. The production and assembly of so many small, low-cost, components into a unit, which will give adequate service and freedom from leakage for many months, is quite an achievement.

I have enjoyed seeing Precision Valve's well engineered production setup and was particularly impressed with their techniques and tests to insure quality of their final product. While they have been

doing an excellent job on the quality control front, they have not neglected new developments, either. I recently enjoyed discussing some of these topics with Bob Abplanalp and Joe Pizzurro. We share their enthusiasm for the opportunities in the food field with the nitrogen system.

Recently, in getting information for a Continental pharmaceutical producer, we had occasion to check into the special operators used for pharmaceutical packages. We were particularly impressed with some of the new types that VCA have developed. Speaking of VCA, we were very sorry to hear of the severe auto accident, in which Roy Ferry, chief engineer of VCA, was injured, and know all in the trade wish Roy a speedy recovery.

Incidentally, what is slowing up the metered foam valve? I saw two good ones demonstrated some time ago and thought that only minor production "bugs" were to be solved.

The Profit Margins

Many in the industry are concerned because of the decreasing profit margins in contract filling. The fairly familiar refrain is heard that most, if not all, of the profit is being squeezed out of this business but many of the companies concerned are still expanding, so perhaps the "tale of blues" should not be taken too seriously. As we have said before, this is a business where scrap is often made ten months after production, so the integrity, technique and production ability of the contract filler are even more important than ability to deliver products on short notice to meet a sales schedule.

Barbecue Sauce

Those who have developed a pitcher's "wrist" from spooning barbecue sauce over the viands on the slow turning spit of the backyard grill will really appreciate the latest push button assist. It's Sizl-Spray, a Barbecue Sauce, marketed by Anderson Foods, Inc., of Menlo Park, Calif., and packed by Western Filling. We've tried it and find it very good. It's packed in a Continental domed can and has a Precision valve. I thought the use of a full can diameter overcap was particularly good for a food product to avoid a too complete similarity to the standard run of household aerosol products. The cap is from Sterling Seal Co.



PRELUDÉ TO DANCE

Opaque Plastic

by Leo Amino

Just as Leo Amino gets new
and beautiful effects in his sculpture by
exploring the full potential of new,
modern materials . . .

Courtesy Sculpture Center

PFW achieves new beauty in the combination
of aromatics by adding the results of modern
research to the ancient art of perfumery . . .
creating new, distinctive fragrances of unusual
beauty and artistry.

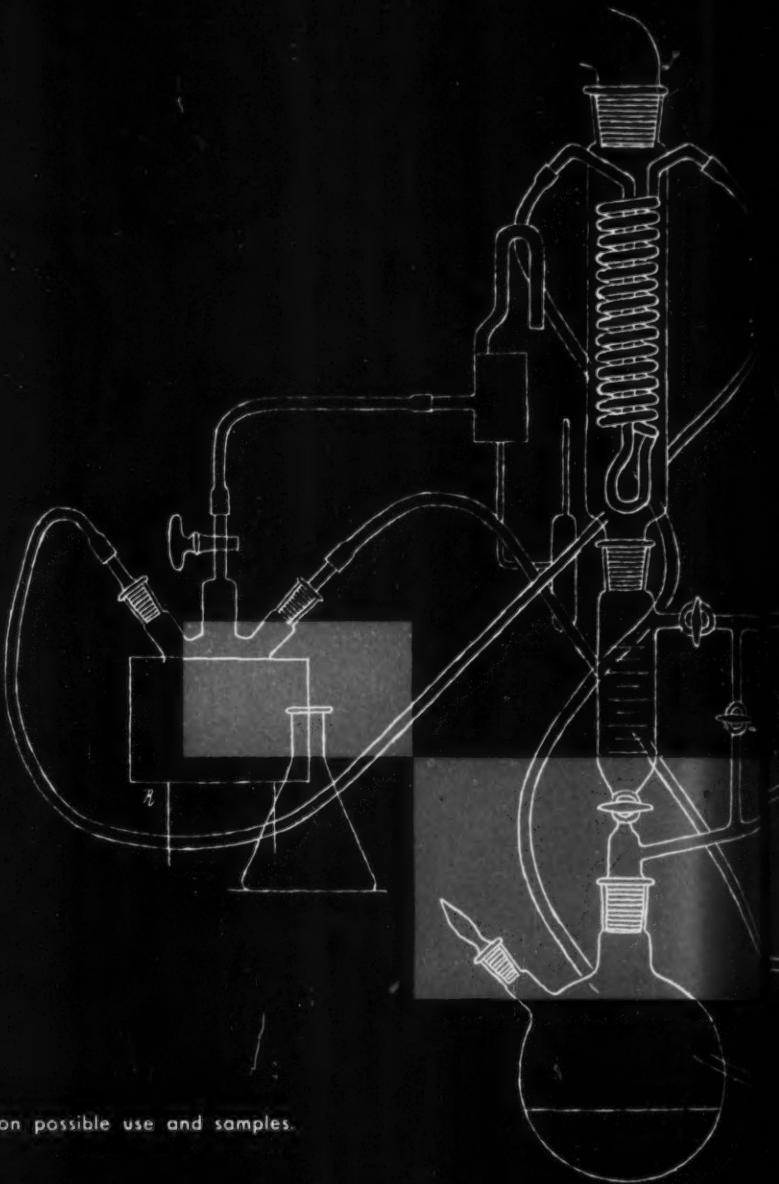
If you have not yet discovered how PFW's
carefully balanced perfume bases or special
compounds can give your products a special
significance, we suggest you contact us, soon.



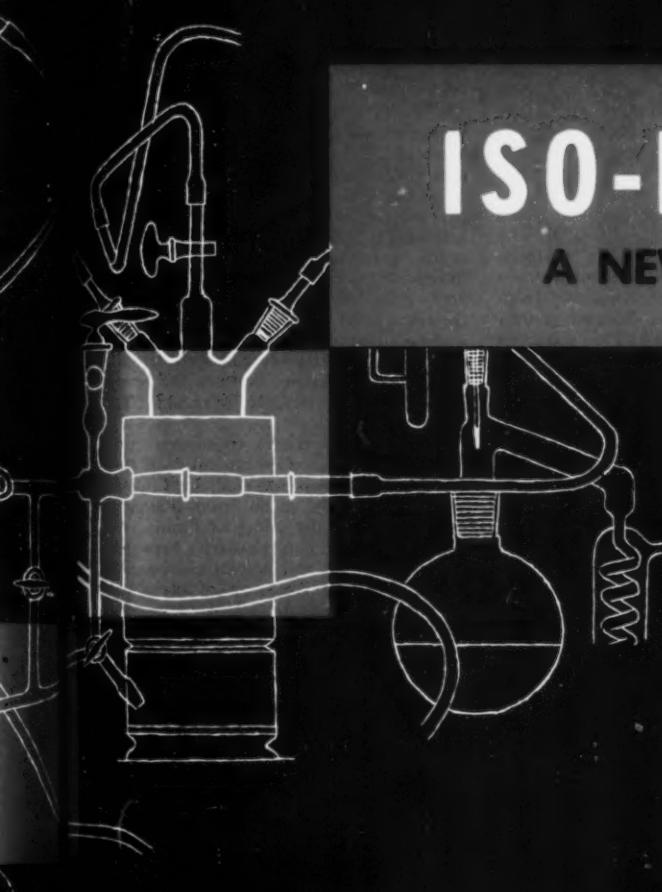
POLAK'S FRUTAL WORKS INC., MIDDLETOWN, N.Y.
AMERSFOORT, HOLLAND • PARIS, FRANCE • BREMEN, GERMANY • BRUSSELS, BELGIUM • SOFLOR LTD., PERIVALE, ENGLAND

for odor and taste

A BUILDING BLOCK FOR YOUR SUCCESS



Write for chemical and physical details, information on possible use and samples.



ISO-BERGAMATE

A NEW AROMATIC CHEMICAL

The ester of a new terpene alcohol with
the empirical formula $C_{12}H_{18}O_2$,
and reproducing the characteristic
mild, basic fragrance
of the bergamot oil (*Citrus bergamia*).
ISO-BERGAMATE "DRAGOCO"
discovered and tried in our laboratories,
is now in production and
available for prompt shipment.



DRAGOCO INC.

250, West Broadway, NEW YORK 13, N.Y.
Telephone: CANal 6-5813 15



major world source

of
LANOLIN DERIVATIVES
 and
FATTY CHEMICALS
 for
MODERN COSMETICS

POLAWAX

Non-Ionic
 Emulsifying Wax

self-bodying for
 stable o/w emulsions.

SUPER HARTOLAN

Light yellow grade of
 lanolin alcohols

NEW FLUILAN

Deodorized pure
 liquid lanolin

PROTANAL

Pure edible and technical
 alginates, water-soluble thickeners,
 stabilizers, film forming
 agents

their explosive violence when dropped, I would say they contain at least 50% propellant and would take a bet that at least two of them contain difluorodichloromethane. However, as stated, I hope to show photographs of these bottles during the explosion.

Mrs. Wiener does not like me treating the halogenated hydrocarbon propellants as ideal gases, although for simple calculations, this has been done by better men than I. I think the majority of people will appreciate that my treatment of the subject in very simple mathematical terms was sufficiently close to reality. Now, when we attempted to show how much gas was available from a breaking aerosol bottle, we realized that heat losses would reduce this volume by a substantial amount and emphasized this point. I defy anyone to calculate accurately the true reduction in volume, it will differ with each explosion and there are so many factors to be taken into account that our "guesstimate" of a 40% reduction stands despite criticism. Mrs. Wiener's purely theoretical figure of 61.7% reduction makes no allowance for such items as heat from glass and floor. One can make both my and Mrs. Wiener's expansion figures much more impressive (from the explosion point of view) by dividing the ultimate volume by the volume of the propellant and not that of the bottle. I would not like to say which is correct, you can make a case for both. However, we used the less dramatic approach and Mrs. Wiener accepted this in her calculations. However, when Mrs. Wiener takes a volume of 65 cc's for her bottle and compares her result with my figure using 56 cc's, then I must bring this discrepancy to the attention of readers. That isn't cricket, or should it be baseball?

I think the two Figures in Mrs. Wiener's article should have been omitted. Why show a curve for a propellant she is not discussing in her article; and what is the significance of her Figure 2; apart from the fact that it boomerangs back at her when she talks of cohesive forces between propellant and alcohol? I hope Mrs. Wiener will now agree with me that my treatment of heat transfer from alcohol to propellant was realistic and in point of fact, fundamental. The argument of assuming cohesive forces between propellant and alcohol and comparing them to similar forces between carbon dioxide and water will not, I am sure, have been accepted by many readers. We believe that Mrs. Wiener is out of order in applying her laws of thermodynamics to the gas/liquid system and in any case, the work is without significance unless she relates it to the final velocity of the glass pieces.

I really do not understand why Mrs. Wiener criticizes my drop test data. The conditions established were for the purpose of breaking the bottle and recording the effects by way of a photograph. At 6'6" all bottles, (except one isolated beverage bottle) broke at the first drop. The decision as to the height from which a bottle could possibly be dropped lies with the individual manufacturer and it is a matter of conscience

in deciding whether or not to give the benefit of the doubt to the consumer. This matter of how high a bottle may be placed in a home has nothing whatever to do with my drop test; and incidentally, please note that the beverage bottles were also dropped from 6'6".

Mrs. Wiener has pulled out an old chestnut in talking of continuing to use cars, electricity, drugs, etc., despite the fact that they are potentially dangerous. This particular argument also boomerangs back to her because just as we take every conceivable safety precaution with cars, electricity and drugs, so we can and should, apply such precaution to aerosols.

Perhaps the most amazing part of Mrs. Wiener's article is constituted in a complete reversal of opinion. Only as recently as August 1956 she wrote an excellent article in "Aerosol Age." In this article she emphasized the large increase in volume of the propellant when exposed to atmospheric conditions. She points out how this sudden increase in volume creates a huge force which propels glass at high velocity in all directions and to great distances. She wrote at some length on the great difference between the aerosol and the carbonated beverage. To quote her:

"Shattering of bottles containing carbonated beverages does not produce the same problems encountered with glass packaged aerosols made from liquefied propellants, for the effect of flashing is not present. The only similarity between the glass aerosol and bottled carbonated beverages lies in the stress of the glass produced by pressure which influences the breakage factor. However, after the bottles are broken, it is quite obvious that the shattering of the glass from the true aerosol would be much greater than with carbonated beverages tested under the same conditions. It has been observed that the strength of the glass is greatly influenced by the medium in contact with the glass surface. Water and alcohol considerably reduce the strength of glass (up to 20%) while dry paraffin oils and some plastics increase its strength (about the same amount). This effect is probably caused by surface tension and invisible surface flaws."

Readers will notice that Mrs. Wiener advocates the use of alcohol in her second paper but shows how its presence may weaken the bottle in her first article. Lastly, it is of interest that in her first paper she uses the words explosion and shattering without reservation, but in her second paper uses inverted commas or changes explosion to more gentle words.

No hard feelings Mrs. Wiener, and I very much hope to have the pleasure of meeting you again one of these fine days.

The 82 year old Sir Winston Churchill gives this prescription for longevity: "A lot of drinking, a lot of eating and eight or nine hours of sleep, most of it in the daytime."

The team makes the manager, the play makes the actors, the song makes the singer and sometimes the wife makes the husband.—Samuel Himmell.



VALUABLE CONTENTS DEMAND



THE FINEST IN PROTECTIVE PACKAGING

Manufacturers of all types of tin, tin-coated,
aluminum, lead, and Sheffaloy tubes.

To give your product a container that is safe,
sanitary, lightweight, smart and convenient
—specify SHEFFIELD. It pays to use the best.

Product of The Sheffield Tube Corporation
Established 1850...Finer packaging from a century of experience
Home Offices and Factory New London, Connecticut
Sales Offices • New York • Chicago • Los Angeles



SHEFFIELD TUBES

Answers to Tax Quiz on page 36

1. (b) On leased property, you normally spread the cost of improvements over the shorter period—the life of the improvement or the term of the lease. Since your lease expires in four years and presumably the furnishings will have a longer life than that, you should be able to claim a \$250 deduction on your federal tax return for this year and the next three years.
2. (c) The money you received from the company must be reported as income, but you may deduct the cost of moving your entire family. If the amount the company gives you exceeds your expenses, the excess is taxable. Conversely, however, if your expenses were more than the amount received, the difference is not deductible.
3. (a) and (b) are both correct. All taxpayers are entitled to a \$50 dividend exemption. A husband and wife can combine their exemptions and receive \$100 in dividends tax free, providing the stock is jointly owned. The filing of a joint return will not qualify them for this double exemption if the stock is held in only one of their names.
4. (c) You cannot deduct contributions to an organization which spends a substantial part of its time lobbying or distributing political propaganda.
5. (a) You gained a son-in-law but lost a \$600 dependency exemption for 1957 when your daughter married in November. All is not lost, however. If you provided more than one-half of your daughter's support during the year, you may claim her medical expenses as a deduction on your return.
6. (c) Watching television can be most relaxing and it might even help you to forget your poker losses—which is the thing to do because net gambling losses are definitely not deductible. Net gambling gains are taxable as income; so if you won money in a football pool or other sources, you may use your poker losses to offset these gains.
7. (b) The IRS has ruled that "if the repairs do nothing more than restore the property to its condition immediately before the casualty and do not add to (its) value, utility or useful life, such repair costs may be used as a measure of the value of the destroyed portion." Where you were going at the time of the accident does not affect the deductibility of car damages.
8. (b) Commutation fees are not a deductible business expense. The cost of going to and returning from work, whether it be by bus, cab, train or plane, is not deductible since it is a personal expense. On the other hand, a and c are deductible.
9. (c) Damage to your shrubbery caused by children, dogs or errant lawnmowers is not deductible. If your home or lawn is damaged by fire, storm or flood the loss not covered by insurance may be deducted. When large amounts are involved it is wise to have an expert appraisal made immediately after the casualty.
10. (b) Since your son works for you, you are not supposed to pay social security tax on his wages, nor is he required to make contributions. If your business is incorporated, however, the corporation must pay social security tax on his salary.
11. (a) Your deduction for a charitable contribution is the value of the gift at the time it is made. You are not considered to have realized a taxable gain or deductible loss when you give property away. You may claim a deduction for the entire \$1,500 so long as this amount does not exceed 20 per cent (30 per cent in some cases) of your adjusted gross income.
12. (b) The roof is considered an improvement, not an ordinary repair. The cost of replacing the roof is deductible as depreciation spread over its estimated useful life.
13. (c) In the absence of fraud or substantial understatement of income, the Government has three years from the due date of your 1957 return to check your return and bill you for additional tax. Since the due date of most individual returns is April 15 and for investigation purposes all returns are treated as though filed on the due date, you should be sure to save all check stubs and receipted bills to prove your declared deductions until April 15, 1961.
14. (c) The fee which a CPA charges you to prepare a tax return or defend the accuracy of your return before the Treasury Department is deductible in full if you itemize deductions.

Ease New Package in Quietly

By easing new packaging for a product onto the market without any fanfare it is possible to avoid large inventories of obsolescent packaging, according to Philip J. Kelly, in charge of marketing for Calvert Distillers Co.

Speaking before the Sales Executives Club, Mr. Kelly said that in introducing the new packaging for Calvert Reserve, "We said nothing about it. Therefore, we had no inventory problem of obsolescent packages. We just eased it into the market, and in our advertising, until we had complete distribution."

"You don't have to cause a revolution and suffer from obsolescence in introducing a new package, if you do it the right way. The wholesale and the retail trade will make a great crisis out of anything if you will let them," he said.

Mr. Kelly said that in today's market there's "no pat formula" for conducting business. He said that Calvert believes in five essentials for successful merchandising: Packaging, promotion, product, personality and people. To maintain leadership, Mr. Kelly said, an annual

checkup policy should be followed, geared to the following recommendations:

1. A careful scrutiny of packaging, without fear of changes.
2. A critical look at advertising. If it isn't right, revise it. But make sure of what you're doing.
3. As for sales promotion, pre-test items before buying in quantity. If you can get permanent identification, try for it.
4. If you have a good product story, put it in the hands of your salesmen, so that they can tell it with conviction.
5. Don't spare your competitors.
6. Make use of any altruistic educational plan if it is possible in your field. Though it may be a long pull in getting it across, the investment will pay off in new business.

Market research men, he maintained, ought to be called in on a new product just as soon as handmade models of the product appear. Deciding what to spend on market research should be related to the over-all cost of wrongly going national, rather than the over-all test market promotion costs.

now available:

synthetic

Geraniol

by Glidden



THE GLIDDEN COMPANY



SOUTHERN CHEMICAL DIVISION

Sales Offices:

52 Vanderbilt Ave.,
New York

25 E. Jackson Blvd.,
Chicago

P. O. Box 389
Jacksonville, Florida

OWENS-ILLINOIS ASSURES YOU A COMPLETE PACKAGING APPROACH



Co-ordinated Research

Pure research into fabrication of glass, packaging research into processing and handling methods in customer plants, market research into consumer attitudes. All add up to greater packaging value.



Engineered Design

At Owens-Illinois, your package's *three* needs are taken into account: 1) Considerations of its function in the retail store, 2) its operating efficiency, and 3) its consumer utility.



The Right Container

Versatility of facilities and talents make O-I your best source of supply. In container development—beauty, utility, tradition are blended in the right proportions for your product's needs.



The Right Closure

Through long and continuing research O-I has developed the most advanced metal and plastic closures. Helping you choose the right closure is another function of O-I's packaging service.



Needed Fitments

O-I specialists are keenly aware of sales benefits derived from plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.



Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and warehouse . . . as well as on your own filling line and in transit.





Your special product is sure to get more attention in an attractive custom-container . . . designed by Owens-Illinois

The custom concept of fine packaging

HERE ARE TWO EXAMPLES of an Owens-Illinois specialty—*custom-container design*. For the right product, the distinctive product, there's no wiser merchandising buy!

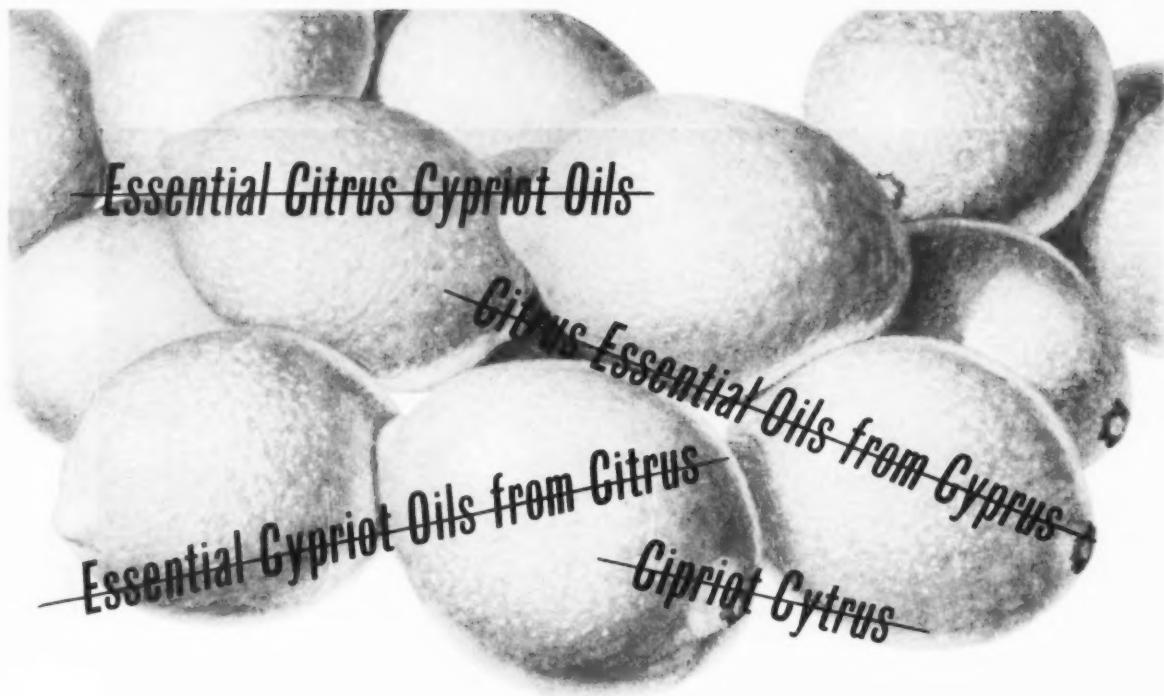
Designed for your product by Owens-Illinois, a custom container pays off in many ways. *More attractive*, it draws immediate attention to your product . . . *more distinctive*, it works toward positive buying action . . . *more functional*, it helps build repeat sales by protecting your product—by keeping it fresh—by making it always easy to use.

At Owens-Illinois, custom-container design is but one part of O-I's Complete Packaging Service. A large staff of experienced designers and packaging experts are ready to work with you in the development of your *complete* salespackage—stock or custom containers of all types, capacities and designs—label designs—special fittings—metal and plastic closures—proper closure liners—merchandising cartons. Everything you need for a successful salespackage!

For more information, call the Owens-Illinois branch office near you today.

DURAGLAS CONTAINERS
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO



CYTRUS FROM CIPRUS?

YOU WILL AGREE that worthwhile citrus oils must retain their delicate original flavour, and must be absolutely pure. Lanitis produce such oils in Cyprus. The 1957 supply of Lanitis oils is of superb quality. If you want samples we will send them, proudly send them, because they are derived from the fruit by the *very latest methods*. These entail the minimum contact of oil with water during the process of oil extraction. No wonder Lanitis oils are comparable with oils produced anywhere else in the world. Write to:

LANITIS BROS. LTD. P.O. BOX 500, NICOSIA, CYPRUS

CITRUS OILS CITRUS PASTES CLEAR ALCOHOLIC FLAVOURS HYDROSOL FLAVOURS CITRUS CRUSHES



News

and Events

Advice on Food Law Offered by Food & Drug Administration

An advisory information service on the federal food, drug and cosmetic law has been established by the Food & Drug Administration. It will provide statements on subjects of interest selected chiefly from letters written to officials of the administration in response to inquiries.

Dentifrice Advertising Claims to be Checked

Claims for dentifrices and vitamins in advertising are being examined by a subcommittee of the House of Representatives of Congress. The committee is measuring the effect of government regulation of false and misleading advertising.

In view of the trend to check carefully extravagant claims for cosmetics the Toilet Goods Assn. has called attention to the service of the Board of Standards in reviewing any advertising submitted to it with a view to having the industry police itself and in this way forestall any inimical legislation.

Guenther Back From Six-Month African Safari

Dr. Ernest Guenther, Vice President and Technical Director of Fritzsche Brothers, Inc., is back at his New York office following completion of one of the most interesting yet difficult, foreign assignments of his entire career as a specialist in the study and elucidation of essential oil production throughout the world. While these investigations, covering a period of more than six months spent in Kenya Colony, Southern Africa, Madagascar, the Comoros and Reunion Island, have been conducted in the interest primarily of his firm, the entire industry has been kept fully informed of his investigations by the frequent GUENTHER REPORTS written by him "while on location" and issued to the trade.

A pictorial record of his ventures into "darkest" Africa was also made and it is expected that these will provide the foundation for a short series of films to be presented in due time. In addition to a perceptive study of each area's economic conditions, Dr. Guenther's survey covered the production of oils of geranium, mahwah, lemongrass, vetiver, ylang ylang, eucalyptus, clove, cedar wood, various citrus oils, and the cultivation of vanilla beans.

Wesemann Forty Years With Fritzsche Brothers

Hans P. Wesemann, vice-president in charge of sales of Fritzsche Brothers, Inc., was honored at a luncheon given him by the officers and directors on November 22, in celebration of his 40th anniversary with the New York aromatic chemical and essential oil firm.

Joining the Fritzsche organization in 1917, and an active participant in its affairs during its periods of greatest growth, Mr. Wesemann became Director of Purchases. In 1914 he was elected to the Vice-Presidency.

The informal luncheon celebration at Charles' Restaurant was headed by President John L. Cassullo, whose toast to the firm's oldest executive in terms of active service was a warmly expressed acknowledgement of his long and faithful devotion to the firm.

KOLMAR EXECUTIVES MEETING



French, English and German Executives of Kolmar Laboratories. Dani Steinels, general manager of all French, English and German plants facing camera. Others clockwise: Dr. A. Wahl, Kolmar-Europe technical director; Peter Hoenig, technical assistant to general manager; Dr. H. Stoffel, manager Kolmar Cosmetics (Germany); and K. Strelbel, manager of Kolmar Cosmetics (England) Ltd.

DR. GUNTHER COMPLETES AFRICAN TRIP



Dr. Ernest Guenther, Fritzsche Brothers, Inc., standing beside small plane which took him from Tamatave to Fenerive on the east coast of Madagascar.

Edouard Courrand Speaker At CIBS Luncheon



Edouard L. Courrand, r, president of Lanvin, is greeted by George Kaempkes, Pacquin, president of the Cosmetic Industry Buyers & Suppliers Assn. (CIBS). Mr. Courrand was guest speaker at the regular monthly meeting of the CIBS, an organization of the younger men in the cosmetic industry.

Growing Aged Group Offers Market for Special Cosmetics

The number of people over 65 years of age in 1970 will be 19,513,000, according to an estimate of the U. S. Census Bureau. Between the present and 1970 the number of persons 65 years of age and older will increase 50% faster than the gain in the total U. S. population.

As a result of this manufacturers of toilet preparations are planning new products aimed specifically to appeal to the old age market. They are talking about "cosmepeutics" which would include products to delay the aging process of the skin and hair preparations to help prevent baldness, delay graying hair or restore the natural color of the hair.

Dr. Walter Taylor Joins Disperser Co. as Associate

Dr. Walter A. Taylor, one of the founders and a former president of the Society of Cosmetic Chemists as well as its present treasurer has joined the Disperser Co., Corona 68, N.Y., as an associate. The company produces specialized emulsifiers for the cosmetic, pharmaceutical and chemical specialties industries under the Neocol trade name.

Dr. Taylor brings to the company broad industrial experience. He was formerly manager of the research and control laboratories of Pond's Extract Co. where he served for over 15 years. Prior to that he was with the Atlas Powder Co. where he developed uses for the polyols.

W. J. BUSH COMMONWEALTH CONFERENCE



Reg. W. Jennings, executive vice-president of W. J. Bush & Co. (Canada) Ltd., Montreal, was photographed with the chief executives of two other W. J. Bush companies in the British Commonwealth, when they met recently to discuss general policy with the board of the parent company at its headquarters in London, England. W. J. Bush & Co., Ltd. have been manufacturing and supplying flavors, essences, essential oils, chemicals, and aromatics for over 100 years. E. L. Bush

and C. F. Bush, in the photograph above, are grandsons of the founder of this world-wide organization. The United States company, W. J. Bush & Co. Inc., is headed by Richard Webb, who is a great-grandson of the founder. Seated (l to r) H. W. Vernon, C. F. Bush, E. L. Bush, A. J. McIntyre, C. R. Woods, all members of the London Board. Standing (l to r) Peter J. White (South Africa), Reg. W. Jennings (Canada), and Joseph A. D. Paul (Australia).

Francois Goby Discusses Economic Outlook in France and Floral Crops

Francois Goby, director of Tombarel Freres, Grasse, France, who commutes annually to the United States, completed his 64th crossing of the Atlantic ocean November 23 when the Pan-American airplane on which he made the trip landed at Nice, France.

Mr. Goby had been in the United States for six weeks most of which time was spent in conference with Dr. Paul Muhlethaler, president of Tombarel Products Co. Inc., the American company.

The many friends of Mr. Goby were delighted to learn that he had recovered from the illness which confined him in the hospital during his last trip to the United States. He was as active as usual and looked forward to a continuation of good business.



Francois Goby

Mr. Goby felt that economic conditions in France will be normalized under the administration of Premier Felix Gaillard who, with his Secretary of State for Economic Affairs Emile Hugues when they were in the preceding government, followed protective measures for the benefit of both French exporters and their foreign customers.

As to the later crops Mr. Goby reported that the lavender crop has been abundant and as a result prices are very advantageous to buyers who do not hesitate to liberally increase the employment of this most useful raw material in their formulas. On the contrary, the quantity of oil of lavender produced was less than last year due to a lower yield.

The crop of jasmin in Grasse was started late in the year and was extended until October 24, good weather permitting such an extension. Mr. Goby pointed out that the production of concrete was reduced about 15% to 18% of this very precious oil, the quality of which, he emphasized cannot by far be entirely replaced by oils from other countries.

Mr. Goby and Dr. Muhlethaler announced that Arthur C. Gogarty who is very popular in the trade, was recently appointed vice-president of Tombarel Products Corp. in charge of sales and management and that Howard Miller continues to be vice president in charge of production.

Bloomingdale's Features Perfumes With Designer Dresses

"Dress yourself in Perfume . . . Ciro's French Perfume, obviously", is the motif of Bloomingdale's bank of six front windows. Each window has two mannequins in black dinner dresses and feature the tie-up of the black dress with a flash of color, Ciro's newly restated French perfumes and continuities, with colored accessories to match each perfume. The backgrounds are life-size blow-ups of action shots of the dancer, Tom Kelly, with top models in fantastic surrealistic dancing poses.

Each window displays a grouping of a single Ciro perfume with colored accessories and a copy of the current *Vogue*, opened to one of the five-color pages of Ciro advertising.

Fragrance Executives Meet With Rutgers University Faculty

A meeting of representatives of leading companies in the toiletries, perfume and soap fields as well as essential oil and aromatic chemicals manufacturers with faculty members of the school of Chemistry of Rutgers University was held in New Brunswick, N. J. on November 13, for the purpose of discussing the curricula for the second semester of the evening course in perfumery and essential oils. This course will be given by Steffen Arctander, whose accomplishments in the fragrance field are well known.

Those present at the luncheon were: Messrs. George Fuller and Steffen Arctander for Colgate-Palmolive Co.; A. T. Fiore for Givaudan-Delawanna, Inc.; Phillip C. Burnham for Hoffmann-La Roche, Inc.; Pierre Deleamont for Firmenich, Inc.; Richard A. Markus for Leonhardt Foundation, Inc.; Fred C. Theile perfume administrator and Dr. O. L. Marton for Shulton, Inc.; Wm. C. Meluch for the Trubeck Laboratories, Inc.; Dr. Ernest T. Theimer for van Ameringen-Haebler, Inc.; C. K. Wellenkamp for Verona Chemical Co.; and Drs. P. A. van der Meulen, D. B. Denney and S. Ulrich for Rutgers University. Representatives of S. B. Penick Co. and Norda Essential Oil & Chemical Co., Inc., who also have given their support to this endeavor, were unable to be present.

It was suggested at the meeting that the contents of the coming semester include both basic chemistry of aromatic materials and practical application of perfume ingredients. It was felt that the greatest benefit would be derived by having a lecture period followed by a laboratory session devoted to practical handling of the basic perfume raw materials.

The present semester dealing with Terpene Chemistry is currently being given by Prof. Donald B. Denney at the Newark campus of Rutgers The State University.

Prof. P. A. van der Muelen, Director of the School of Chemistry, expressed his thanks on behalf of the University for the assistance given by the above mentioned companies towards the establishment of these courses.

DRESS YOURSELF IN PERFUME



PRIZE WINNING PORTRAIT OF MADAME HELENA RUBINSTEIN



This portrait of Madame Helena Rubinstein, by Australian artist, William Dobell, won first prize of \$3,360 in the Australian Women's Weekly magazine portrait contest. The Australian News and Information Bureau describes it this way, "Glowing with color it is a masterly composition of a vibrant personality. The paisley gown slashed with black, the arresting features with their beady black eyes glowing between arched brows, the gathered mane of black hair, the blue-green skin tones of the hands and arms loaded with sea-green emeralds, dangling ear baubles, a choker of diamonds and emeralds, are magnificently executed against a background of red and black strokes which deftly disposes of the difficult square of the frame and defines the flowing contours of the dress and figure." The winning portrait of the contest was one of 450 entries. (Photo courtesy Australian News and Information Bureau)

**Dr. C. W. Pampel
Celebrates 70th Birthday**



Dr. Carl Wilhelm Pampel

Dr. Carl Wilhelm Pampel celebrated his 70th birthday earlier this month, another milestone in a life devoted to perfumery. Born in 1887, he studied chemistry in Leipzig and was awarded his Doctorate in Philosophy for a dissertation on a scientific subject, which was completed during his first months of practical work. In 1911, he was employed with Messrs. Heine & Co. in Leipzig, as perfumery chemist. In 1935 he was put in charge of the whole perfumery department of that firm, a position which he held until the beginning of 1950.

The Second World War saw the destruction of almost two-thirds of the firm of Heine & Co. Because of the division of Germany, Dr. Pampel, then 62 years old, offered his services and his experience in the field of perfumery to the firm of Dragoco Ltd., in Holzminden. This progressive firm, founded in 1919 by C. W. Gerberding, made him

chief perfumer in its perfumery department, thus combining its own youthful impetus with the experience of mellower age.

By taking this step, Dr. Pampel was again able to pick up the threads which had been broken during the war and until as late as 1950, and he was able to get in touch again with his colleagues in international perfumery. His name is well known throughout the perfume industry, for he has a reputation as the creator of a whole collection of perfume compositions of international repute.

Yet when mentioning Dr. Pampel's career, we should not forget his personal qualities. He is always friendly, helpful and full of humor, drive and initiative. He looks like a man in the prime of life, and certainly not a day over sixty. He finds relaxation in natural surroundings, for he is a lover of nature and a tireless nature photographer. On those days when he is not able to wander through the woods and fields, he relaxes to the strains of good music. His love of music rounds off his personality, as it were. The happy blending of scents in his perfume-compositions and his love of music are both an expression of his particular talent for harmony in the world of scent and tone.

We would like to convey our heartiest congratulations to Dr. C. W. Pampel on his 70th birthday, and we hope that the future has many more happy and successful years in store for him.

**Operations Research
Saving Pharmacists Money**

Speaking at the Section on Pharmaceutical Economics and Management of the 4th Pan-American Congress of Pharmacy and Biochemistry, at the Hotel Mayflower, Dr. Louis C. Barail, Consulting biochemist and toxicologist, described how Operations Research is saving scores of pharmaceutical houses huge amounts of money in solving management problems, production bottlenecks, personnel difficulties and many other troubles.



Joseph S. Lindemann (left), President of The Nestle-LeMur Company, receiving the Bronze "Oscar" Award for the best Annual Report of the Cosmetic Industry from Richard J. Anderson, Editor and Publisher of "Financial World."

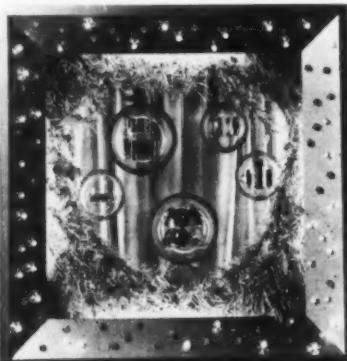
**Andre Givaudan
Visits the United States**



Andre Givaudan

Andre Givaudan of L. Givaudan & Cie, S. A., Geneva, Switzerland, arrived recently on his semi-annual visit to this country. Mr. Givaudan visited with his many friends in the industry and discussed with them current industry problems encountered both here and abroad. He left the United States on November 16th for his return trip to Paris and Geneva.

**Scovill
Christmas Display**



This Christmas display of the Scovill Manufacturing Co. in their New York office window in the Chrysler Building combines the star-bright glitter and tinsel of the Christmas Season with the ever present satellite theme. Suspended plastic spheres may many of the containers that Scovill makes for the leading cosmetic manufacturers.

**Nestle-LeMur Wins Coveted
"Oscar of Industry" Award**

The Nestle-LeMur Co. was judged as having the best annual report of the Cosmetic Industry, in the final ratings by an independent board of judges in the Seventeenth Annual Survey of *Financial World* magazine. A Bronze "Oscar of Industry" was presented to Joseph S. Lindemann, president of Nestle-LeMur, at the awards banquet of the Hotel Statler in New York. Approximately 5,000 reports were entered in this year's competition. From this number, 1,874 qualified for final screening for the bronze trophy awarded in each of 100 industrial classifications.

Former New York S. C. C.

Chairman Moving to Chicago

Warren B. Dennis Jr. who has been actively interested in the New York Chapter of the Society of Cosmetic Chemists since it was founded and who, in the past year served as chairman of the Chapter with distinction, has resigned from Shulton Inc. to join the organization of Lady Esther in Chicago, in January.

Houbigant to Sponsor Flower Arranging TV Show

Houbigant Sales Corp. recently held a special two-day sales meeting at the New York Athletic Club to outline the details of its unique new television advertising program for next spring.

The plan, a highlight of which are thirteen 15 minute television programs, entitled, "How to Arrange Flowers," starring authority J. Gregory Conway, will be seen in 85 trading areas from March through June. Each week during that time Mr. Conway will conduct a lecture-demonstration on the principles and techniques of arranging flowers. The varieties and materials he will use are available in most regions and he liberally illustrates practical application in the home for all of the arrangements he composes. Viewers can work along with Mr. Conway.

Three Houbigant fragrances will be included in the commercials—Chantilly, Quelques Fleurs and Flatterie. A preview of the film was shown at the meeting.

H. T. Georgi, sales manager, outlined the merchandising and publicity plans which stress general service and how-to-do aspects of flower arranging. For the first time, Houbigant is offering institutional programs which appeal strongly to women in general. The close affinity of flowers and fragrance is a key point in the merchandising and publicity plan which will be of primary interest to leading stores.

British S.C.C. Hears Talk On Gas-Liquid Chromatography

The Cosmetic Industry was the first to acclaim the new method of analysis known as Gas-Liquid Chromatography. Because of its importance to the Industry the American Society of Cosmetic Chemists made the Annual Special Award for 1957 jointly to Dr. A. J. P. Martin, F.R.S., and Dr. A. T. James who together developed the process. The British Society was honoured by the presence of Dr. James at the first scientific meeting of the session on October 29 at the Royal Society of Arts. The President, J. Pickthall, F.R.I.C., took the chair when Dr. James gave a fascinating account of the method and suggested a number of uses to which it might be put in the Cosmetic Industry.

After tracing the relationship between gas-liquid chromatography and the process or distillation, Dr. James described the special conditions applying to the

DOROTHY GRAY TRAINING SCHOOL



Dorothy Gray Training School for salesgirls of the Walgreen Drug Stores in the Chicago area was conducted by Margaret Herbert, director of the Dorothy Gray Salons, and Marge Newton, Dorothy Gray sales representative, at the Sheraton-Blackstone Hotel. Photographed with the class above (standing at rear) are left to right, Elaine Sinclair and Roberta Brown, Dorothy Gray special representatives; Max J. Knight, merchandise manager of cosmetics for Walgreen Drug Stores, Mrs. Herbert, and Miss Newton.

new method. The substances amenable to treatment must be distillable other than by molecular distillation and have a vapour pressure of not less than a few millimetres of mercury at the temperature of the column, say between 150° and 200°C. The stationary liquid phase must have a low vapour pressure, in the order of 10⁻³ mm. hg. at that temperature. By using at one time a stationary phase of a saturated compound such as paraffin wax in which only Van de Waal's forces can operate and at another an aromatic compound containing centres of unsaturation very much more information can be obtained than by any process of distillation. In any investigation by the method it is desirable to change the nature of the stationary phase in this way. The liquid phase is preferably mounted on Kieselguhr about 2.5 grams to 10 grams of the kieselguhr, and the powder so impregnated must be very uniformly packed by vibration into the narrow tube of the column.

The various methods and types of equipment required for the detection and estimation of vapour emerging from the column were illustrated by lantern slides.

Amongst the striking examples of application an account was given of the determination of the position of the double bond in an unsaturated fatty acid by gas chromatography of the oxidation breakdown components, a mono and a dibasic acid. The recognition of fatty acids containing an uneven number of carbon atoms in the molecule in natural products such as rabbit sebum was described.

In discussion the following points emerged:

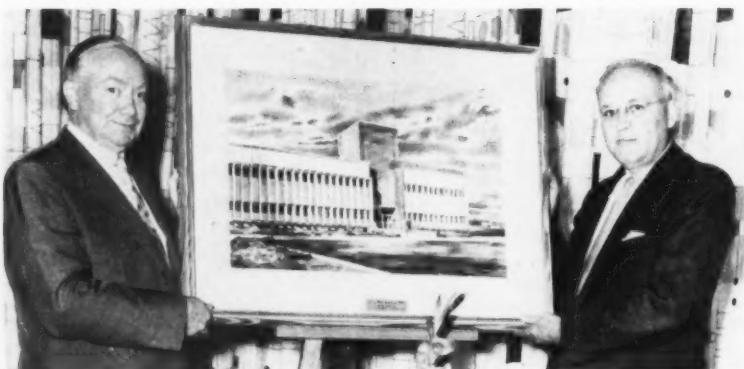
1. Gas chromatography will handle quantities for purification up to about 100 grams but not very large batches.
2. The Theoretical Plate calculated for a gas chromatography cannot be directly equated to the Theoretical Plate of a distillation process.
3. Failure to separate a mixture of certain terpenes reported by two speakers was attributed by Dr. James to unwarranted acceptance of the evidence of one stationary phase liquid.
4. Apparatus for the titrimetric estimation of ionisable vapours emerging from the column would shortly be available in America.

PFIZER RESEARCH EXPANSION



Artist's view of new chemical and biochemical laboratories to be erected by Chas. Pfizer & Co., Inc. adjacent to company's plant at Groton, Conn. The structure will represent an expansion of the company's research facilities in Groton and will permit the company to expand some of its research departments now located in other communities. Completion is scheduled for the latter part of 1959.

LAMBERT-HUDNUT OFFICIALS RECEIVE AWARD FOR NEW PLANT



Joel Y. Lund, President of Lambert-Hudnut (left) and Lawrence A. Flagler, Manufacturing Vice President of the company, are shown with a painting of the company's new plant in Lititz, Pennsylvania. The painting represents an award made to Lambert-Hudnut by "Factory Management and Maintenance" on selection of the plant as one of ten outstanding plants constructed in 1956. The plant now produces over one million finished packages a week of diversified drug and toiletry lines.

JUDGES WITH 1957 AEROSOL PACKAGING AWARD WINNERS



Judges for 1957 Aerosol Packaging Awards are shown with winners in ten product categories, including the two products that tied for top honors. Judges are (seated) Mrs. Paul Green, Kings Point, L.I., N.Y., housewife and Mrs. Edyth Ramsay, "American Home" magazine; and (standing, left to right) Arthur R. Botham and Leigh Allen, industrial designers; Maurice E. Bale, President, Harold F. Ritchie, Inc., and John Gerald, President, Hammacher Schlemmer, New York.

MYSTIC SANDALWOOD OIL

Genuine Mysore Sandalwood Oil, distilled at our Linden, N. J. plant, is the chosen standard of purest quality by all leading Perfumers.

W. J. BUSH & CO., Inc.
137 Boston Post Road, Cos Cob, Conn.

Tel. Townsend 9-8363 or dial WEstmore 7-3424



New Macrocyclic Musk Offered by Polak & Schwarz

Woody and slightly fruity overtones distinguish Musc 781 and lend it individuality, according to the makers, Polak & Schwarz. In addition to its impressive fixative properties its presence in perfumes at very low concentrations makes itself felt at all stages of evaporation. This property is said to be particularly evident in alcoholic solutions where it produces a mellowing effect on the alcohol. A descriptive booklet and samples are available from Polak & Schwarz Inc., 667 Washington St. New York 14, N. Y.

Toni Announces Sales Reorganization

Important organization and personnel changes in The Toni Co.'s Sales Division were announced recently by Walter G. Willie, vice-president in charge of sales. Heading the list of changes is the establishment of three new positions, Merchandising Managers of the Drug Chain, Food Market and Wholesale and Retail Drug Divisions.

Clark J. Gutman, who will continue as Sales Promotion Manager, has been named Merchandising Manager of the Drug Chain Division. William Frost, formerly manager of the company's Variety Chain Division, has been appointed Merchandising Manager of the Food Market Division. Robert Bryant, formerly Eastern Regional Manager, has been assigned Merchandising Manager of the Wholesale and Retail Drug Division.

Other shifts in sales personnel, as described by Willie, include the following. Joseph Richardson, formerly Philadelphia District Supervisor, has been promoted to succeed Frost as Manager of the Variety Chain Division. Vincent Jones, formerly Cleveland District Manager, will replace Bryant as Eastern Regional Manager. Ross Ludwig has been named Central Region Manager. In assuming this new responsibility, he will relinquish his former position as Chicago District Manager. This position will now be assumed by Vern Wilkins, formerly Chicago District Supervisor.

NOW OVER 5100 BIOS CHEMICALS

including
**ALL NEW & RARE
SYNTHETIC & NATURAL
RAW MATERIALS**
For Perfumes & Flavors

Ask for our new complete catalogue

BIOS

Laboratories, Inc.

17 West 60th St., New York 23, N.Y.

Plaza 7-8171

**Mackenzie and Mazza
Promoted at Shulton**

Frederick Mackenzie, plant engineer at Shulton, Inc., Clifton, N. J., has been promoted to chief engineer. He succeeds Nicholas Fowler, who resigned. Eugene Mazza succeeds him as plant manager.

**Herbert Schuette to Head
"Markenartikelverband"**



Herbert Schuette

The leading German manufacturers of branded articles called on Herbert Schuette, managing director of the house of "4711", Cologne, to be the president of their association, "Markenartikelverband".

The traditional conscience of quality of the house of "4711", the rich experiences as well as Mr. Schuette's long years of activity as president of the German Cosmetic Industry, provide an excellent qualification for his honorable task.

MAGIKIST "TEASER" SIGN CAMPAIGN



A giant, ruby red, 30-foot wide kissprint opens a "teaser" sign campaign. No advertising copy embellishes the 14-ft. high "Kiss of Beauty" trademark, first in a series of copyless kissprint signs to be erected in Chicago. Eventually the name "Magikist" will be added above the trademark in 9-foot high letters. Local beauty shops are selling Kiss of Beauty lipsticks, and the Magikist firm has introduced a number of novelty items which merchandise the kissprint trademark. On hand for the completion of the sign installation are Magikist president Wilbur M. Gage (left), and William B. Grace, of Federal Sign and Signal Corp., manufacturer.

JANET MYERS GUEST SPEAKER



Miss Janet Myers, Publicity Director of Bourjois, Inc., who was Guest Speaker at October Dinner Meeting of California Cosmetic Association at the Statler Hotel, Los Angeles. C.C.A. Officers in photo (from left) are 1st V.P. Donald A. Breyer, Anatole Robbins, Inc.; Pres. Harry F. Taylor, Studio Girl Hollywood, Inc.; 2nd V.P. Paul Klein, Paul Klein Industries, Inc., and William H. Nenstiel, Program Chairman, Robert H. Gair & Co., Inc.

**Rayette Announces
Five Promotions**

Five promotions and two additions to the executive staff of Rayette, Inc. were announced recently by Mark L. Arend, president. William G. Reveley, formerly manager of Hair Products and Chemical Research is promoted to director of Research and Chemical Operations. Walter P. Niemiec, formerly vice president in charge of production is now vice president of Manufacturing. Charles L. Ellingson is promoted to purchasing manager of all divisions. Henry J. Meyers now assumes the title of eastern regional sales manager of the Salon Equipment Division. Mark Draves is promoted to Regional Sales Manager of the Mid-eastern Territory. Additions to the staff are Robert Kenney, personnel manager, and Phillip E. Stengl.

**Morningstar Purchases
Haberland Co. Facilities**

Morningstar, Nicol, Inc. announced recently, through its President, George J. Muller, the acquisition from W. A. Scholten's Chemische Fabrieken, N.V., Holland, of the plant and facilities formerly owned and operated by Haberland Manufacturing Co. of Clifton, N. J. Morningstar, Nicol, Inc. is presently the exclusive U. S. sales agent of Scholten's for their line of specialty potato starch and chemical products. The new facilities will be operated as the Haberland Division of Morningstar, Nicol, Inc.

OBITUARY

Roy L. Zeno

Roy L. Zeno, manager of the Water Soluble Gum Department of S. B. Penick & Co for 25 years, died at his home in Hollis, L. I. November 9. He was 63 years old. Mr. Zeno was a member of The Railroad-Machinery Club of New York and was a former secretary of the Water Soluble Gum Association of the U. S. A. He is survived by his wife, three sons and three grandchildren.

George W. Merck

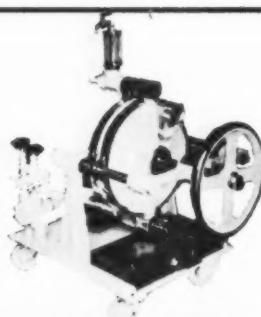
George W. Merck, chairman of the board of Merck & Co., Rahway, N. J. died November 9 from a cerebral hemorrhage at the age of 63 years. Merck & Co. is the outgrowth of a pharmacy founded in Darmstadt, Germany almost 300 years ago, by Jacob Merck. Merck & Co. in the United States was founded by George Merck as a sales agency for the German concern. George Merck succeeded his father as president in 1925 after ten years of service with the company and in 1949 was elected chairman of the board.

Dr. Karl W. von Massow

Dr. Karl W. von Massow, chief chemist for the C. E. Ising Corp. for the past 14 years died November 16 in the Queens General hospital, Jamaica, N. Y.



FILTERS AND BOTTLE FILLERS for the Perfumer



MODEL EBW PORTABLE FILTER — This filter is recommended for small capacity requirements. Accommodates from 4 to 8 12½" dia. filter disks. Easy to set-up and operate.

PORTABLE VACUUM BOTTLE FILLER



Will rapidly fill small or batch lots of material at lowest cost. Fills bottles to uniform height without loss of material. Interchangeable spouts for filling shaker-type bottles to gallons.

ASBESTOS FILTER SHEETS

Various Sizes

Ertel Asbestos Filter Sheets for ultra polished brilliance are used for many fine perfumes and cosmetics. Available in 10 grades to fit all standard filters. Write regarding samples for superior result tests in your filter.

Write for Illustrated Catalog

ERTEL
ENGINEERING CORP.
10 FAIR ST., KINGSTON, N. Y.
Branch Office & Showroom
New York City



SPOTLIGHT

News...

A. D. McKelvy Co. and Prince Matchabelli, Inc. and George L. Schultz, president of the Shulton Co. have been elected directors.

Jacob Manheimer, veteran of the essential oil industry who was 93 years old August 16 continues to be active.

Synthetic laevo menthol, a flavoring material is to be produced by the Glidden Co. in a new plant in Jacksonville, Florida, nearing completion.

A new simulated pearl finish has been introduced by the Ultra Ray Pearl Essence Co. which was recently formed. The new finish is claimed to be as brilliant and versatile as the natural pearl essences derived from the scales of fish.

For fundamental research E. I. duPont de Nemours & Co. have appropriated \$15,000,000. This is to be spent in a search for scientific knowledge without regard to specific commercial objectives.

Monsanto Chemical Co. has acquired 50% of the voting and issued stock of the Plax Corp., Bloomfield, Conn. in exchange for shares of Monsanto common stock. Plax has plants in Connecticut and Indiana for making blown plastic products including bottles made from polyethylene and other resins and plastic materials. Owens Illinois Glass Co. in 1953 purchased 250,000 Plax shares for \$8,000,000 as an investment. It was this stock that was acquired by Monsanto.

A new promotional development in children's toiletries has been launched by Helene Pessl Inc. It is the first institutional advertising campaign in the company's history according to Arnold Perlman, president of the company. Fine 8x10 in. color reprints of original oil paintings showing "little ladies" by noted artists will be available to all purchasers of the toiletries through a special coupon offer.

Manufacturers who produce cosmetics for the young housewife and for babies may be interested to learn that half of all first brides reach the altar before the age of 21½ years. One-third of all 18 and 19 year old girls in the United States are married. More girls marry at the age of 18 than at any other age. More than three million girls will marry in the next five years. More than half a million teen age girls marry each year. About 38% of all brides are under 20 years of age.

Approximately 70% of all its household products volume is in products that were not in existence 12 years ago the Procter & Gamble Co. reports.

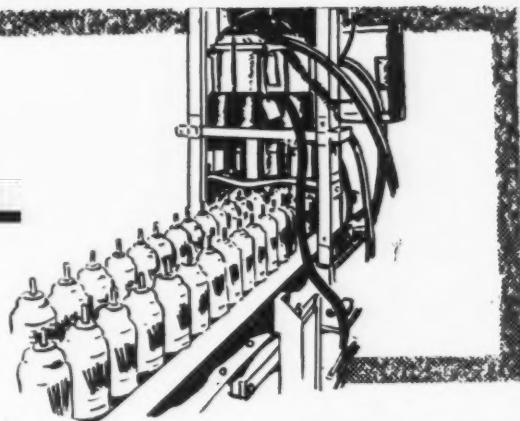
An estrogenic hormone has been isolated from Ladino clover by Agricultural Research Service scientists. It has been named coumestrol and is known to be present in alfalfa and strawberry clover as well as in Ladino. The new hormone was discovered at U. S. D. A.'s Western Utilization Research and Development Division in Albany, Calif.

A new vice president and two directors have been elected by the Toilet Goods Assn. to fill vacancies. Robert E. Schwartz, Wildroot Co., has been elected a vice president and Owen Stoner of the

Food and Drug Research Laboratories Inc. are now located in new and larger quarters at Maurice Ave. and 58th St., Maspeth, 78, N. Y. Thousands of rats and other experimental animals were moved to the new location from the old one in Long Island City on a warm Autumn day to protect them from chills. For 35 years the company has been known as Food Research Laboratories. The name was changed when it moved to its new location.

New public relations counsel have been appointed by the Collapsible Tube Manufacturers Council, with the appointment of Robert D. Eckhouse & Associates, New York.

Guide to AEROSOL PACKERS



EAST

ARMSTRONG LABORATORIES

Custom, contract and private label fillers of metal, glass and plastic aerosol containers.

write or call

ARMSTRONG LABORATORIES

421 La Grange Street

West Roxbury, Boston 32, Mass.
Tel. Fairview 3-7404

EAST

Thomasson OF PA., INC.

AEROSOL FILLING

for Contract and Private Label
Marketers

Also Liquid Filling

Complete Research and
Laboratory Facilities
Constant Quality Control

Norristown, Pa. BRoadway 5-4355

EAST

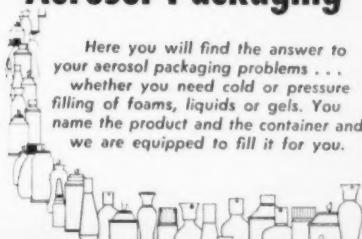
Old Empire

AEROSOL FILLING AEROSOL CONCENTRATES

SHAVE CREAM
HAIR LACQUER
COSMETIC SPECIALTIES
PHARMACEUTICAL
SPECIALTIES

MT. PROSPECT & VERONA AVES.
NEWARK, N. J. • HUMBOLDT 4-2121
N. Y. C. WORTH 4-7870

Aerosol Packaging



POWR-PAK, INC.

643 North Ave., Bridgeport, Conn.

IMAGINATION • CREATION • REALIZATION



AEROSOL TECHNIQUES INCORPORATED

Exclusively private label manufacturer of aerosol cosmetics, pharmaceuticals and chemical specialties.

Bridgeport 5, Conn. EDison 6-0176

SUN-LAC INC.

"Successful through Service"

274 LAFAYETTE ST., NEWARK 5, N. J.

Aerosol Packaging

Small Runs Solicited on . . .

Cosmetics, Creams, Foams, Perfumes, Powders, Household Items, Insecticides, Industrial Products, & Plastic Sprays.

We formulate and develop new products. Quality controlled productions—bulk storage facilities, pressure & "Cold Fill" facilities. Special plan for companies requiring national distribution. We supply samples and do experimental work at no charge. Write or phone MA 3-7727 for full information.

Powders—Liquids—Emulsions

SUBSCRIPTION ORDER FORM

AMERICAN
PERFUMER
& AROMATICS
48 W. 38th St.
New York 18
N. Y.

Enter my subscription to
AMERICAN PERFUMER & AROMATICS
for one year at \$5.00

Payment Enclosed Bill Me Later

NAME

COMPANY

ADDRESS

CITY ZONE . . . STATE . . .

(NOTE: This rate effective in USA & Canada only. To cover added postage costs, subscription rate in other countries is \$15.00 per year.)

MID-WEST



Symbol of
Experience in Aerosol
Development & Packaging

for Aerosol "Know-How" Call

CONTINENTAL FILLING CORPORATION

123 N. Hazel • Danville, Illinois

SINCE 1953 . . .

A Confidential
Consulting Service
Devoted To All Phases
Of Aerosol Technology
And Service
With Complete
on-Premises
Laboratory Facilities

"clients' service — my only obligation"

• DEVELOPMENT

Formulation
Mechanical Components
Processes

• TESTING

Physical
Chemical
Shelf Life
Legal Compliance
Comparative Evaluation

• SERVICE

Plant Layout
Equipment Checkout
Personnel Training
Customer Service
Pilot Run Packaging

ROBERT A. FORESMAN, JR.

AEROSOL CONSULTANT

1690 Margaret Street • Phila. 24, Penna.

for **UNIFORM PURITY**
UNIFORM TEXTURE
UNIFORM WHITENESS



Experimental data and practical manufacturing experience of over 100 years' specialization in beeswax and beeswax compounds are at your service without cost or obligation. Write about your beeswax problems to

WILL & BAUMER CANDLE CO., INC.
Dept. AP, Syracuse, N.Y. • Established 1855
Bleached White Beeswax—Yellow Beeswax—Stearic Acid—
Spormacell—Ceresine—Composition Waxes—Red Oil



look for the symbol of the **RETORT**

YOUR GUARANTEE
OF MATCHLESS QUALITY,
PURITY, UNIFORMITY

Behind the symbol of the Retort stands three generations of family pride and "know-how" in Essential Aromatics, natural and synthetic flavors, perfumer's specialties. Made in the West's most modern plant, the Retort is your guide to dependability.

F. Ritter & Co.
Los Angeles 39, California
Branch Offices in Principal Cities



PERSONALITIES

Dr. John R. Brown, Jr. has been elected as a director and vice-president in charge of Colgate's Research and Development. Dr. Brown joined the Colgate-Palmolive organization directly from his



Dr. John R. Brown, Jr.

post as vice-president of Research and Development of the Spencer Chemical Co. Dr. Brown is a graduate of Oberlin College, where he received both his Bachelor's degree in chemistry as well as his Master's. He also holds a Doctor of Science degree from M.I.T.

Irving Michaels, credit manager, Revlon International Corp., has been elected chairman of the Drug & Chemical Export Club of the Foreign Credit Interchange Bureau. Frank Bor, Jr., assistant controller, Johnson & Johnson International, was elected vice-chairman.

Ronald P. O'Hanley has been appointed Coordinator of Advertising and Market Research for the Cosmetic Container Division of the Scovill Manufacturing Co. Mr. O'Hanley joined Scovill



Ronald P. O'Hanley

in 1954 and has been Assistant to the Advertising Manager of the Closure Division. A native of Boston, Mr. O'Hanley is a graduate of Holy Cross College.

Benjamin d'Ancona has been appointed senior vice-president of the Polak & Schwarz American Organization. Mr. d'Ancona's association with Polak & Schwarz dates back 38 years



Benjamin d'Ancona

and since that time he held responsible positions with P & S branches in different parts of the world, before joining the U.S. Company in 1940.

Joseph A. Danilek, president of Mary Chess, Inc. returned recently from a visit to the West Coast where he spent some time with Lil Taylor, Mary Chess West-Coast representative, contacting accounts in and around Los Angeles. Due to the press of business in New York Mr. Danilek came directly back to New York, making but one stop-over in Denver.

Donald H. Stillman has been appointed sales manager of Dorothy Gray, Ltd., according to an announcement by James M. Boohecker, general manager. Mr. Stillman has for the past five years been



Donald H. Stillman

merchandise manager and assistant sales manager of Tussy Cosmetiques. He is a graduate of Dartmouth College and of the Tuck School of Business Administration.

Dr. Ernst T. Theimer has been appointed Director of Research for van-Ameringen-Haebler Inc. Dr. Theimer has been engaged in various research activities with VAH since 1931. His new



Dr. Ernst T. Theimer

responsibilities include direction of research on aromatic products and processes, as well as on new analytical techniques for product control. Dr. Theimer has two degrees in Chemistry from the University of Cincinnati and received his Ph.D. at New York University. He has long been active in the Essential Oil Assn., and is chairman and founder of its Instrumental Analysis Committee. He is a member of the American Chemical Society and is a national councilor for that organization, as well as a former vice-chairman of the North Jersey Section.

Fred R. Gardner has been appointed sales manager of Aerosol Techniques, Inc., according to a recent announcement by H. R. Shepherd, president. Mr. Gard-



Fred R. Gardner

ner comes to Aerosol Techniques from Stein Hall & Co. Mr. Gardner will direct the company's expanded sales program among the cosmetic, pharmaceutical and food marketers from New York.

Directory of...

PRIVATE BRAND COSMETIC MANUFACTURERS



KOLMAR LABORATORIES

World's largest manufacturer of private label cosmetics with plants in Port Jervis, N.Y., Milwaukee, Wis., Los Angeles, Calif. Foreign plants to serve you in Canada, Mexico, Australia, England, France and Germany.

EXECUTIVE OFFICE
224 N. Broadway
Milwaukee, Wisconsin

P · L · C

*manufacturers
of*

P r i v a t e L a b e l C o s m e t i c s

Co., Inc.

373 East 148 St., N.Y. 55, N.Y.

PRIVATE LABEL FORMULATION

CONTRACT PACKAGING

**CREAMS • LOTIONS • POWDERS
COLOGNES • PERFUMES •
DEODORANTS • PHARMACEUTICALS**

We offer a complete manufacturing, filling and packaging service. Adequate warehouse facilities. Complete shipping service.

R. GESELL • INCORPORATED
200 WEST HOUSTON ST. • NEW YORK 14, N.Y.
WATKINS 4-3870

KOLMAR COSMETIC SPECIALTIES

The complete package service for the smaller distributor.

PLANTS AT: Port Jervis
Milwaukee
Los Angeles

OFFICES:

Empire State Bldg., N.Y.
224 N. Broadway
Milwaukee, Wisconsin
1260-No. Western Ave.
Los Angeles, Cal.

JUST OFF PRESS!

"INTERNATIONAL ENCYCLOPEDIA OF COSMETIC MATERIAL TRADE NAMES"

by Maison G. DeNavarre

Covers more than 3,000 important trade names that every chemist, supplier, and buyer—in fact, every member of the cosmetic industry—should know. Includes not only a thorough listing of all the materials of the world used in cosmetic practice, but also:

- a quick, concise description of each material, identifying the composition of the particular materials, and in many instances listing specific types of cosmetic items in which they are used.
- the names and addresses of the suppliers of these materials.
- a complete, cross-indexed classification of the various types and uses for the materials.

The **INTERNATIONAL ENCYCLOPEDIA OF COSMETIC MATERIAL TRADE NAMES** will be a valuable tool in your hands—it will answer important questions that come up in your daily work—it will give you the facts you need to do a better job!

Over 350 pages—Completely Indexed—Cloth Binding—Only \$7.50 Postpaid!

ORDER YOUR COPY TODAY!

American Perfumer & Aromatics Book Division

48 West 38th Street • New York 18, N.Y.

(NOTE: Write for quantity discounts on orders for five or more copies)

Leon Givaudan, director and general manager of Companhia Brasileira Givaudan, São Paulo, Brazil has returned to South America after a three week visit to the United States most of which time was spent in conference with members of the staff of Givaudan-Delawanna, Inc.

Donald H. Bush, who has been active in the essential oil and aromatic chemical industries for a decade has joined the perfume division of Fritzsche Brothers Inc.

Roy Ziegler has been placed in charge of production at the Newark and Clifton plants of the Fine Chemicals division of Shulton, Inc.

Geoffrey B. Smith has been appointed national sales manager for Helena Rubinstein Inc. for both the United States and Canada.

William Sablowsky, who has been associated as chemist with the late Dr. Karl W. von Massow, chief chemist for the C. E. Ising Corp. has taken over the work of his chief as chief chemist.

Frederick A. Koch, who retired from Dow Chemical Co. after 38 years of experience in the sales department, was tendered a testimonial dinner by a host of his friends in the New York area at the Chemists Club, New York.

Dorothy A. Douglass has been appointed assistant perfumer in the Perfume Department of Shulton, Inc.

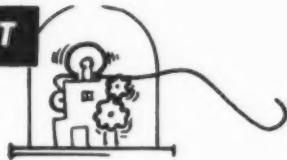
Dr. Foster Dee Snell, president of Foster D. Snell, Inc., has been elected chairman of the Eastern Division of the American Council of Independent Laboratories, Inc.

John H. Mathis has been elected to the Board of Directors of Lanolin Plus Inc. Mr. Mathis is president of State Pharmacal Co., a division of Lanolin Plus.

Charles H. Revson, president of Revlon Inc. was the guest of honor at the annual awards dinner of the advertising industry November 12 at the Waldorf Astoria hotel, New York. The event was sponsored by the Joint Defense Appeal of the American Jewish Committee and Anti Defamation League of B'nai Brith.

Mrs. Frances Hollis, executive vice-president of Mary Chess, Inc. returned recently very much pleased with her trip to the various Mary Chess retail shops at the Lake Placid Club, in the Adirondacks; Beverly Hills, Calif.; The Greenbrier, White Sulphur Springs, W. Va., and Washington, D. C. All of the shops, Mrs. Hollis reports, have shown substantial gains and the newly opened one at the Lake Placid Club this Summer proved to be a great success. Mrs. Dorothy Price will again be in charge of the shop when it opens next season. The other retail shop is at 334 Park Avenue in New York City, under the direction of Mrs. Bea Bond.

MARKET REPORT



Price Trend Downward...Year-End Buying Slow

Year-end holiday buying of essential oils, aromatic chemicals and specialty items got off to a slow start this year with the downward price trend and a leveling off in industrial activity serving to make manufacturers cautious. Major suppliers were counting on a last minute rush in orders, however, especially from

the toiletry, proprietary, and perfume trades to bring the years volume of sales closer to earlier expectations. Approximately 10 percent of the years total toiletry sales are put through in November at the retail level, while December accounts for about 21 percent of the years volume.

technical and USP grades of sodium benzoate exceeds four million pounds a year. Technical grade of sodium benzoate was not affected by the reduction but the price of USP material in 100-pound fiber drums was cut to 43 cents per pound in two thousand pound lots and 45 cents in 1,000 pound lots. New price for USP.. benzoic acid is 48 cents per pound for single ton lots.

PRICE CHANGES

Advances

	Current	Previous
Coconut oil, double dist.	\$ 0.20	\$ 0.19
Cocoa butter	0.96	0.86
Gum styrax, Asiatic	1.35	0.95
Rhodinol		
Extra	37.00	35.00
Standard	23.50	22.75
Red oil, tanks	0.17½	0.17
Stearic acid, single pressed	0.16½	0.16
Vanilla beans, Bourbon	8.00	7.75

Declines

	Current	Previous
Hydroxy citronellal	\$ 4.95	\$ 5.20
Hydroxy citronellal, extra	5.45	5.75
Hydroxy citronellal dimethyl acetal	5.95	6.20
Oil lemongrass	1.10	1.25
Oil citronella, Formosan	0.82	1.00
Benzoic acid, USP	0.48	0.54
Sodium benzoate, USP	0.38	0.41½
Oil patchouli	5.00	5.25

(Prices per pound unless otherwise specified)

VANILLA STOCKS LOW—

In an effort to assure American extract manufacturers of obtaining a well cured product, no new beans will be allowed to be exported out of Madagascar until January 1. In previous years first lots of new crop goods were shipped as early as October. There are virtually no old crop beans available in Madagascar and stocks held by local dealers and importers are low. Limited unsold quantities are being held at \$8 to \$8.75 per pound.

RHODINOL ADVANCES—

With makers currently using higher cost geranium oil that had been purchased some weeks ago, prices for rhodinol have been steadily edging upward. Extra grade is quoted up to \$37 to \$40 per pound and the standard grade to \$23.50 to \$25.

CITRONELLA IN GOOD SUPPLY—

Because of good stocks and a sluggish demand, Formosan citronella oil dropped to a new low price of 82 cents a pound

with indications of a further slump in prices on the basis of some fairly low priced offerings out of the primary center for future shipment. Prices for Ceylon citronella oil were barely steady over the past month, but fluctuations were confined within a narrow range.

STRONG OUTLOOK IN BERGAMOT—

The Consortium in Italy is only allocating about 40 percent of the quantities of oil normally shipped to the United States and other countries. Stocks here have been materially reduced by purchases for the account of perfumers who have been anticipating their year-end holiday requirements. New crop bergamot oil will not be available until late December.

MAKERS CUT BENZOATE PRICES—

USP grades of sodium benzoate and benzoic acid were reduced by 7 to 10 percent. The reduction marked the first change in makers selling prices in a number of years. Output of both the

STYRAX SCORES SHARP RISE—

The trend in Asiatic styrax gum has been upward with limited unsold amounts being quoted at 40 cents per pound above the quotations in force a month ago. Supplies at the primary center as well as in the local market have become virtually exhausted by sudden spurts in demand. In some quarters there have been hints of new and growing outlets for the article. Higher prices range from \$1.35 to \$1.50 per pound.

ANETHOL STEADY—

Prices on both technical as well as USP., grades of anethol have been holding steady. The position of the market is in sharp contrast to that of a year ago, however, when substantial quantities were being sold in the export market.

CITRONELLAL LOWER—

The persistent drop in Formosan citronella oil carried prices for hydroxy-citronellal and hydroxy-citronellal dimethyl acetal to lower levels. The reduction amounting to 30 cents established the regular grade of hydroxy-citronellal at \$4.95 per pound. Extra grade was reduced to \$5.45, and hydroxy-citronellal dimethyl acetal to \$5.95 per pound.

CITRUS GROUP FIRM—

Ample quantities of Floridian orange oil continue to be available but Californian oil remains in a tight supply position. For a time it was believed that a falling off of sales for the account of the beverage trade from the peak summer level would tend to ease the overall position. Major suppliers are still being forced to allocate deliveries. Italian lemon oil which has gained considerable acceptance to the trade here because of results noted in various end products, appears to be working higher in price. There has been a large European demand for the fresh fruit and cull lemons which normally would be used for oil, are reported being held for use in Italy.

WE BUY FOR CASH

CLOSE-OUTS • SURPLUS

Bottles • Caps • Jars • Containers • Chemicals • Closures
Cosmetics of any Descriptions
Also Business Small or Large . . .

UNIVERSAL OUTLET CO.

1 E. 15th St. • New York 3, N.Y.
Telephone Oregon 5-9444—
Oregon 5-8568

1905 — 1957

FIFTH AVENUE PROTECTIVE ASSOCIATION

A
NATIONALLY USED
COLLECTION AGENCY
covering the U. S. through
its own personal representatives

142 Lexington Avenue New York 16, N.Y.
(Our Own Building)

THE C. E. ISING CORPORATION MANUFACTURING CHEMISTS AROMATIC PRODUCTS

MASKING ODORS for INDUSTRIES
FLORAL BASES, ISOLAROMES
(Fixatives)

TRUODORS
(For Perfumes and Toilet Waters)

FOUNDED 1908

FLUSHING NEW YORK

B-W LANOLIN U.S.P.

EVENTUALLY—For better creams, with economy

B-W Lanolin the superior quality puts into your cream that which gives the skin that smooth soft velvety feeling.

B-W Lanolin will never cause your cream to darken, is best by test and contains over 15% free and combined Cholesterol.

No other base used in your cream, equals the merits of B-W Lanolin.

B-W HYDROPHIL (Absorption Base) Made in U.S.A.

BOPF-WHITTAM CORPORATION

Executive Office, Laboratory
and Factory: Linden, N.J.

America's Original Lanolin Producer
ESTABLISHED 1914

Sales Office: 509 Fifth Ave.
New York, N.Y.

Aromatic Chemicals

FOR PERFUMERY AND FLAVORS

Iso Propyl Quinoline • Isobutyl Quinoline
Ethyl Anthranilate • Butyl Anthranilate
Linalyl Anthranilate • Linalyl Isobutyrate

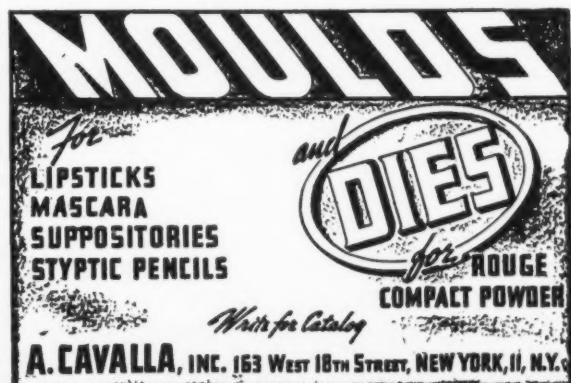
FAIRMOUNT
CHEMICAL CO., INC.
600 Ferry Street Newark 5, N.J.

MOULDS

for LIPSTICKS
MASCARA
SUPPOSITORIES
STYPTIC PENCILS
and
DIES
for ROUGE
COMPACT POWDER

With *for* Catalog

A. CAVALLA, INC. 163 WEST 18TH STREET, NEW YORK II, N.Y.



CAMEO
DIE AND LABEL COMPANY
Creators of fine Labels, Tags and Packages
154 WEST 14TH STREET, NEW YORK II, N.Y.
Oregon 5-0228



CLASSIFIED ADVERTISEMENTS

Rates per line, per insertion: Situations Wanted and Help Wanted, 50c. All other classifications, \$1.00. Please send check with copy.

FOR SALE

FOR SALE: One year's supply of latest information on market prices, new formulations, sales promotion techniques. Delivered to you on regular monthly schedule. Total investment for 12 months: \$5.00. Potential return: Unlimited. Address: Circulation Dept., American Perfumer & Aromatics, 48 W. 38th St., New York 18, N.Y.

"MILORD" An unusually fine and distinguished masculine scent. Created especially for an exclusive line of Men's Toiletries. Extra ordinary in power, depths and lasting qualities. Samples and price on request.



DI SALVO FINE PERFUMES

1422 Chestnut St., Phila. 2, Pa.

SITUATION WANTED

WOULD LIKE TO CONTACT DISTRIBUTORS, ONE TO EACH STATE, TO HANDLE EXCLUSIVE FACIAL FORMULA, CREATED BY A PHYSICIAN. BOX #3154—AMERICAN PERFUMER & AROMATICS, 48 W. 38 ST., N.Y. 18, N.Y.

AGENTS ABLE TO COVER NORTH-EASTERN MARKET SHIPPING, SELLING, STORAGE AND OFFICE FACILITIES, OR ANY PORTION THEREOF, BOX 3166—AMERICAN PERFUMER & AROMATICS, 48 W. 38 ST., N.Y. 18, N.Y.

WOMAN WITH OVER 20 YEARS SUCCESSFUL COSMETIC EXPERIENCE in selling as well as hiring, training, complete management of others—desires connection with good aggressive Cosmetic Co. with complete line. Have office now in Midwest city available. Write Box 3162, AMERICAN PERFUMER & AROMATICS, 48 W. 38th St., N.Y. 18, N.Y.

WANTED TO BUY

RAPIDLY GROWING COMPANY is seeking expansion through acquisition of established business. Will consider both Fine and Industrial compounding perfume business. Write Box 3165, AMERICAN PERFUMER & AROMATICS, 48 W. 38th Street, New York 18, N.Y.

talk to the man who wants to buy!

- There's no better prospect than the man who wants to buy your product or service. American Perfumer & Aromatics readers are preconditioned . . . looking for products they need—your products!

- Use the classified columns of the American Perfumer & Aromatics to reach them. See what a wallop a little space can pack.

- **Classified Dept.**

THE AMERICAN PERFUMER & AROMATICS

48 West 38th St.

New York 18, N.Y.

PROFESSIONAL SERVICE

"L'ART de la PARFUMERIE par EXCELLENCE"
And Its Application to the Industry

DR. JEAN JACQUES MARTINAT

PERFUMER-CHEMIST CONSULTANT

Perfumes
Cosmetics
Toilet Articles
Soaps
Flavors

Creations of Highly Original Perfumes
Duplications of Most Difficult Fragrances
Unique Kind of Professional Services.

Kindly Inquire

333 WEST 52ND STREET, NEW YORK 19, N.Y.
TEL. PLAZA 7-3861

Specialists in analysis

cosmetics, essential oils, drugs

Ask for Estimates—Quotations—No obligation

29 West 15th St., New York 11 . . . WAtkins 4-8800

Seil, Putt & Rusby, Inc.

A DIVISION OF **SNELL**

RESEARCH AND DEVELOPMENT

Cosmetic Formulation and Improvement

Toxicology, skin-irritation studies, analyses and formulations, soap and syndet evaluations. Free booklet: "How to Develop Successful New Cosmetics."

SNELL

FOSTER D. SNELL, INC.

29 West 15th St., New York 11, N.Y.
WAtkins 4-8800

LEBERCO LABORATORIES

Irritation Studies—Sensitivity Tests
Toxicity and Safety Tests on
Shampoos—Cold Wave Lotions—All Cosmetics
Pharmaceutical and Cosmetic Research
Hormone Assays—Bacteriological Studies

ROSELLE PARK, N.J.



Miniature Perfume Bottles

from $\frac{1}{2}$ dram to $\frac{1}{2}$ oz.

Handmade Glass Novelties

Miniature Glass Funnel

SPECIAL ORDER WORK

KENBURY GLASS WORKS

132 W. 14th Street

New York 11, N.Y.



Carl N. Andersen, PhD

Consulting Chemist

Cosmetics, Soaps and Synthetic Detergents

OFFICE AND LABORATORY

150 South Highland Avenue, Ossining, N.Y.

Phones: Wilson 1-1550; Wilson 1-7959

Index OF ADVERTISERS

Aerosol Techniques, Inc.	85	Fisher Chemical Co., Inc.	—
Alpine Aromatics, Inc.	66	Fluid Chemical Co., Inc.	—
American Aromatics, Inc.	15	Foresman, Robert A.	86
American Cholesterol Products Inc.	46-47	Fritzsche Brothers, Inc.	Insert, 51-54
Anderson, Carl N.	91		
Ansbacher-Siegle Corp.	—		
Armstrong Laboratories	85	General Chemical Div., Allied Chemical & Dye Corp.	—
Aromatic Products, Inc.	—	Genesee Trading Co., Inc.	—
Avon Products	6	Gesell Incorporated, R.	88
Bertrand, Freres	23	Givaudan-Delawanna Inc.	11
Bios Laboratories, Inc.	82	Glidden Company, The	73
Boake, Roberts & Co., Ltd., A.	—	Goldschmidt Chemical Corp.	—
Bopf-Whittam Corp.	90	Halby Products	—
Builders Sheet Metal Works	26	Hazel-Atlas Glass Division Continental Can Company	—
Bulgarska Rosa	20	Heine & Company	—
Bush & Co., W. J.	82	Hercules Powder Company Incorporated	—
Cameo Die & Label Co.	90	Heyden-Newport Chemical Corp.	—
Camilli, Albert & Laloue, Inc.	92	Hoffman-LaRoche, Inc.	7
Carr-Lowrey Glass Co.	—	Ising Corporation, C. E.	90
Cavalla, Inc., A.	90	Katz & Co., Dr. Alexander, Div. of F. Ritter & Co.	86
Centrico, Incorporated	—	Kenbury Glass Works	91
Chaleyer, Inc., Ph.	—	Knapp Products, Inc.	—
Charabot & Co., Inc.	—	Kohinstamm & Company, Inc.	—
Chauvet & Co., Pierre	28	Kolmar Laboratories Inc.	88
Chiris Co., Inc., Antoine	12	Lambert Engraving Company	1
Citrus and Allied Essential Oils Co.	—	Lanitis Bros., Ltd.	76
Clark-Millner Sales Co.	—	Lautier Fils, Inc.	22
Classified Advertisements	91	Leberco Laboratories	91
Continental Can Company, Hazel Atlas Glass Division	—	Leeben Color & Chemical Co.	—
Continental Filling Corp.	85	Leonhard Wax Co., Inc., Theodor	—
Cosmetics, Inc.	—	Lueders & Co., George	2
Croda, Inc.	70	Malmstrom & Co., N. I.	—
DeLaire, Inc.	Back Cover	Mapor Corporation	—
Descollonges, Inc.	—	Marchon Products, Ltd.	—
Distillation Products Industries Div. of Eastman Kodak	16	Martinat, Jean Jacques, Dr.	91
Dodge & Olcott, Inc.	24	Maryland Glass Corp.	21
Dow Chemical Co., The	Inside Back Cover	Old Empire, Inc.	85
Dragoco, Inc.	68-69	Owens-Illinois Glass Co.	74-75
Emulsol Chemical Corporation	—	Whittaker, Clark & Daniels	—
Ertel Engineering Corp.	84	Will & Baumer Candle Co., Inc.	86
Esrolko, Ltd.	49		
Fairmount Chemical Co., Inc.	90		
Felton Chemical Co., Inc.	—		
Fifth Avenue Protective Assoc.	90		
Firmenich & Co.	—		



*Joyeux Noël
et
Bonne Année*

Camilli, Albert & Laloue

American Perfumer

AND AROMATICS

IN TWO SECTIONS—SECTION TWO

JANUARY 1958

Published by Moore Publishing Company, Inc.
Publication Office: Emmett Street, Bristol, Conn.
Editorial and Executive Offices: 48 West 38th Street, New York, N. Y.

A

- Abstracts, from the London Symposium on "The Biology of Hair Growth", Dec 42
A New Contaminant of Cosmetic Preparations, Paecilomyces, M. G. deNavarre and Harold E. Bailey, Dec 29
A Personal Account of the S.C.C. European Tour, Maison G. deNavarre, Oct 46
A Thumb-Nail History of Soap, Aug 57
Aerosols—
Aeroscripts, Jack Pickthall, July 23, Aug 15, Sept 29, Oct 81, Nov 67, Dec 50
Aerosol Filler, New Products, Nov 71
Aerosol Packaging Award Winners, News, Dec 82
Aerosol Scientists Optimistic as Industry Expands, Sept 78
Aerosol Spray Patterns, Morris J. Root, July 50
Aerosol Notes, Dr. Winston Reed, Aug 59, Sept 65, Oct 27, Nov 27, Dec 66
Aerosol, Notes on first symposium for Pharmaceutical Industry, Sept 78
Aerosol Production, Developments in, Dr. Egon G. Honisch, Nov 45
Aging Skin, Changes in the, Amos Light, Aug 35
Agricultural Chemists Discuss Cosmetic Analytical Methods, News Oct 87
Aldehydes, Aromatic, Preparation of, Dr. Kurt Kulka, July 39, Aug 45, Sept 47, Oct 54, Nov 37, Dec 39
Alfred E. Weyand, Obituary, Sept 88
All Claims for Carter Aerosol Patent Upheld by Supreme Court, News, Nov 75
Ansbacher-Siegle Corp. Sold to Sun Chemical Corp., News Nov 76
Aromatic Aldehydes, Dr. Kurt Kulka, July 39, Aug 45, Sept 47, Oct 54, Nov 37, Dec 39
Aromatics Production, Use of Stainless Steel in, Richard E. Paret, Sept 55

- Aromatics, Synthetic, in Perfumery, Philip Chaleyer, Aug 39
Assn. of Consulting Chemists Announces New Officers, News, Nov 76
Autrometer, New Products, Nov 71

B

- Bailey, Harold E., and M. G. deNavarre, Paecilomyces, a New Contaminant of Cosmetic Preparations, Dec 29
Balsams and Related Wood Essential Oils, James J. Broderick, Nov 58
Bay Oil, Terpenic Compounds in Puerto Rican, Dr. Noemi G. D. Nadal, Sept. 51
Bedoukian, Dr. Paul Z., The Perfumery Aromatics Industry in the United States, Dec 31
Biology of the Hair Follicle and Growth of Hair, Abstracts from the London Symposium on "The Biology of Hair Growth", Dec 42
Black Pepper, Composition of Volatile Oil of Black Pepper, Piper Nigrum, Torsten Hasselstrom, Eric J. Hewitt and Kurt S. Konigsbacher, and John J. Ritter, Oct 43
Book Reviews, July 54, Aug 53, Nov 86
Booth, Albert B., Investigation of an Impurity in Commercial Isobornyl Acetate, July 48
Borton, William M., How to Avoid New Product Booby Traps, July 46
Bristol-Myers presents Drug Jar Collection to Smithsonian Inst., News Oct 87
British S.C.C. Hears Talk on Gas-Liquid Chromatography, News, Dec 81
Broderick, James J., Balsams and Related Wood Essential Oils, Nov 58

C

- Causes of Caries Intrigue Researchers, Dec 35

- Centrifugal Clarification of Flavoring Materials, Morris B. Jacobs, July 59
Chaleyer, Philip, Synthetic Aromatics in Perfumery, Aug 39
Changes in the Aging Skin, Amos E. Light, Aug 35
Charles C. Concannon, Obituary, Sept 88
Christmas Packaging, Sept 72, Oct 74
Clarification of Flavoring Materials, Centrifugal, Morris B. Jacobs, July 59
Colbert, Dr. Irving, Lanolin and its Forward Look, July 41
Collapsible Tube Council Elects Officers, Directors, News, July 63
Compatibility of the Skin to Cosmetics, Kurt J. Pfeiffer, July 37
Composition of Onion Oil, Morris B. Jacobs, Nov 53
Composition of Volatile Oil of Black Pepper, Piper Nigrum, by Torsten Hasselstrom, Eric J. Hewitt and Kurt S. Konigsbacher, and John J. Ritter, Oct 43
Container Cleaner, New Products, Dec 62
Containers, Use of Polyethylene for Perfumed Products, Nov 43
Cosmetics, Compatibility of the Skin to, Kurt J. Pfeiffer, July 37
CSMA Holds Aerosol Orientation for Press, Aerosol News, July 25

D

- Demineralizer, New Products, Aug 60
DeNavarre, Maison G., A Personal Account of the SCC European Tour, Oct 46
DeNavarre, Maison G., and Harold E. Bailey, A New Contaminant of Cosmetic Preparations, Paecilomyces, Dec 29
Desiderata, Maison G. deNavarre, July 31, Aug 31, Sept 35, Oct 39, Nov 19, Dec 25
Detergent Compositions, Germicidal, Containing "Tamed" Iodine, Dec 37

Developments in Aerosol Production, Dr. Egon G. Honisch, Nov 45
Draize, Dr. John H., to receive SCC Award, News, Nov 75
DuBarry Announces New Perfumes, News, Sept 85

E

Editorial, Oct 30
Electronic Checkweigher, New Products, July 52

Eric J. Hewitt and Kurt S. Konigsbacher, Torsten Hasselstrom, John J. Ritter, Composition of Volatile Oil of Black Pepper, *Piper Nigrum*, Oct 43
Essential Oils, Balsams and Related Wood, James J. Broderick, Nov 58
European Tour, A Personal Account of SCC, Maison G. deNavarre, Oct 46

F

Fair, Ernest, How To Prevent Mishaps in Materials Handling, Aug 43
First Meeting of the Essential Oil Assn. of India, News, Aug 79
Flavor Developments, Morris B. Jacobs, Aug 67
Flavor Materials, Production and Sales of, Morris B. Jacobs, Sept 67
Flavor Section, July 59, Aug 67, Sept 67, Oct 67, Nov 53, Dec 55
Fourth SCC Seminar, Product Testing Methods Investigated At Fourth SCC Seminar, Oct 90
Fragance Industry's Problems Explored, Oct 97

G

Gas-Liquid Partition Chromatography, British SCC Hears Talk on, News, Dec 81
Germicidal Detergent Compositions Containing, "Tamed" Iodine, Dec 37
Givaudan-Delawanna Annual Fall Reception and Cocktail Party, Dec 72
Glycerin Producers Report Sales High, News, Sept 84
Goby, Francois, Discusses Economic Outlook in France and Floral Crops, News, Dec 78
Gray, Albert Woodruff, Perfume Importation Held a Monopoly, Sept 90

H

Hair, Abstracts from the London Symposium on "The Biology of Hair Growth", Dec 42
Hazelton Laboratories Opens Western Division, News, Nov 82
Helene Curtis Announces Executive Appointments, News, July 67
History of Soap, A Thumbnail, Aug 57
How to Avoid New Product Booby Traps, William M. Borton, July 46
How to Prevent Mishaps in Materials Handling, Ernest Fair, Aug 43

I

I.C.C. Grants Railroads Freight Rate Increase, News, Sept 87

I Quiz Master, K. J. Pfeiffer, July 58
Importation, Perfume, Held a Monopoly, Albert B. Booth, July 48
Impurity in Commercial Isobornyl Acetate, Albert B. Booth, July 48
Industry, Development of the Perfumery Aromatics Industry in the United States, Nov 33, Dec 31
Isobornyl Acetate, Investigation of an Impurity in Commercial, Albert B. Booth, July 48

J

Jacobs, Morris B. Dr., Centrifugal Clarification of Flavoring Materials, July 59, Flavor Developments, Aug 67, Production and Sales of Flavoring Materials, Sept 67, Food and Flavor Color, Oct 67, Composition of Onion Oil, Nov 53, The Chicken Flavor, Dec 55

K

Katzman, Morris, Chemist Dies in California, News, Oct 91
Kolmar Ltd's New Plant in Sydney Australia, News, Oct 88
Kulka, Dr. Kurt, Preparation of Aromatic Aldehydes, July 39, Aug 45, Sept 47, Oct 54, Nov 37, Dec 39

L

Lanolin and its Forward Look, Irving Colbert, July 41
Lanolin, Literature on, News, Oct 91
Light, Amos E., Changes in the Aging Skin, Aug 35
Liquid Packeter, New Products, Nov 71
Literature on Lanolin, News, Oct 91
Luba Tavor Forecasts Packaging Revolution, News, Aug 75

M

Magnetic Stirrer, New Products, Nov 71
Market Report, Chester Suckley, July 75, Aug 85, Sept 95, Oct 99, Nov 87, Dec 89
Market Report on Lavender, News, Aug 78
Martin Lowenthal Inc. and Colyer Pectin Co. Merge, News, Nov 76
Materials Handling, How to Prevent Mishaps in, Ernest Fair, Aug 43
Maurice Maubert Honored by France, News, Oct 87
Molecular Still, New Products, July 52
Molecular Vibration, Odor and, E. H. Wright, C. Reed, and H. G. V. Evans Sept 43

N

New Aerosol Metered Valve, Aerosol News, July 25
New Plastic Nail Make-Up, News, July 66
New Product Booby Traps, How to Avoid, William M. Borton, July 46
New Products and Ideas, July 52, Aug 60, Oct 62, Nov 71, Dec 62

New York SCC Learns of Use Microbiology in Cosmetics, News, Nov 80
Nadal, Dr. Noemi G. D., Separation and Identification of Terpenic Compounds in Puerto Rican Bay Oil, *Myrcia Acris*, Using Chromatographic Methods, Sept 51
National Chemical Credit Assn. Officers for 1957-58, News, July 63
Naves, Dr. Yves-Rene, News, Aug 76

O

Odor and Molecular Vibration, R. H. Wright, C. Reed, and H. G. V. Evans, A New Theory of Olfactory Stimulation, Sept 43
Oil, Bay, Separation and Identification of Terpenic Compounds in Puerto Rican Bay Oil, *Myrcia Acris*, Using Chromatographic Methods, Dr. Noemi G. D. Nadal, Sept 51
Oil, Onion, Composition of, Morris B. Jacobs, Nov 53
Oil, Pepper, Composition of Volatile Oil of Black Pepper, *Piper Nigrum*, by Torsten Hasselstrom, Eric J. Hewitt, and Kurt S. Konigsbacher, and John J. Ritter, Oct 43
One Piece Aerosol Dispensing Unit, Aerosol News, July 25
Owens-Illinois Glass Co. Opens New Atlanta Plant, News, Aug 77

P

Packaging, Aerosol Award Winners, 1957, News, Dec 82
Packaging, Christmas, Sept 72
Packaging and Promotion, July 56, Aug 54, Sept 62, Oct 60, Nov 64, Dec 60
Packaging, Luba Tavor Forecasts Packaging Revolution, News, Aug 75
Packeter, Liquid, New Products, Nov 71
Paecilomyces, A New Contaminant of Cosmetic Preparations, Maison G. de Navarre and Harold E. Bailey, Dec 29
Paint Additive, Self-Sanitizing, New Products, Dec 62
Paret, Richard E., Stainless Steel in Aromatics Production, Sept. 56
Perfume Atomizer, New Products, Dec 62
Perfume Importation Held a Monopoly, Albert Woodruff Gray, Sept 90
Perfumery Aromatics Industry in the United States, The, Paul Z. Bedoukian, Nov 33, Dec 31
Perfumery, Synthetic Aromatics in, Philip Chaleyer, Aug 39
Personalized Aero Mug, Aerosol News, July 25
Pfeiffer, Kurt J., Compatibility of the Skin to Cosmetics, July 37
Pharmaceutical Industry, Notes on the First Aerosol Symposium for, Sept 78
Pickthal, Jack, Aerographs, July 23, Aug 15, Sept 29, Oct 81, Nov 67, Dec 50
Pictorial Encore of the SCC European Tour, Nov 40
Plastic Labels, New Products, July 52
Polyethylene Containers, Use of, for Perfumed Products, Nov 43
Preparation of Aromatic Aldehydes, Kurt Kulka, Dr., July 39, Aug 45, Sept 47, Oct 54, Nov 37, Dec 39

Private Mold Bottles, New Products, Dec 62

Product Testing Methods Investigated by Chemists at Fourth SCC Seminar, News, Oct 90

Production and Sales of Flavor Materials, Morris B. Jacobs, Sept 67

Production, Developments in Aerosol Production, Dr. Egon G. Honisch, Nov 45

Production, Owens-Illinois Glass Co. Opens New Atlanta Plant, News, Aug 77

Puerto Rican Bay Oil, Separation and Identification of Terpenic Compounds in, Using Chromatographic Methods, Dr. Noemi G. D. Nadal, Sept 51

Q

Questions and Answers, July 34, Aug 25, Sept 40, Oct 14, Nov 24, Dec 15

R

Railroads, I.C.C. Grants Freight Rate Increase, News, Sept 87

Reading Program, New Products, Aug 60

Reed, C., R. H. Wright, H. G. V. Evans, Odor and Molecular Vibration, Sept 43

Reed, Dr. Winston, Aerosol Notes, Aug 59, Sept 65, Oct 27, Nov 27, Dec 66

R. H. Wright, C. Reed, H. G. V. Evans, Odor and Molecular Vibration, Sept 43

Risdon Charges V.C.A. with Patent Infringement, News, Sept 83

Root, Morris J., Aerosol Spray Patterns, July 50

S

Safrol a Potential Hazard to Health, FDA Finds, News, Nov 75

Sales, Production and Sales of Flavoring Materials, Morris B. Jacobs, Sept 67

SCC of Great Britain Holds Annual Meeting, News, July 64

SCC of Great Britain Hears Talk on Gas-Liquid Chromatography, News, Dec 81

Society of Cosmetic Chemists

Society of Cosmetic Chemists Leaves on European Tour, News, Aug 73

SCC, A Personal Account of the SCC European Tour, Maison G. deNarre, Oct 46

SCC European Tour, Pictorial Encore, Nov 40

SCC, Product Testing Methods Investigated at Fourth SCC Seminar, News, Oct 90

Skin, Changes in the Aging, Amos Light, Aug 35

Skin, Compatibility of the Skin to Cosmetics, Kurt J. Pfeiffer, July 37

Soap, A Thumb-Nail History of, Aug 57

Stainless Steel in Aromatics Production, Richard E. Paret, Sept 56

Standard Taper Sleeve, New Products, Aug 60

Stirrer, Magnetic, New Products, Nov 71

Suckley, Chester, Market Report, Oct 99

Synthetic Aromatics in Perfumery, Philip Chaleyer, Aug 39

T

"Tamed" Iodine, Germicidal Detergent

Compositions Containing, Schimmel Briefs, No. 286, Dec 37

"Teflon" Expansion Joint, New Products, July 52

"Teflon" Tape, New Products, Dec 62

Terpenic Compounds, Separation and Identification of, in Puerto Rican Bay Oil, Using Chromatographic Methods, Dr. Noemi G. D. Nadal, Sept 51

Test Your Tax IQ, Dec 36, 72

The Chicken Flavor, Morris B. Jacobs, Dec 55

Toni Announces Sales Reorganization, News, Dec 82

Torsten Hasselstrom, Eric J. Hewitt and Kurt S. Konigsbacher and John J. Ritter, Composition of Volatile Oil of Black Pepper, Oct 43

Turbo Sifter, New Products, Aug 60

Transistorized Relay, New Products, Aug 60

Twigger Toothpaste in Tablet Form Tested in 20 Markets, Last Minute News, Sept 10

U

US Chemists to Attend International Conference, News, July 65

Use of Polyethylene Containers for Perfumed Products, Nov 43

W

Water-in-Oil Emulsifier, New Products, Dec 62

What does the ABC Insignia Mean? Editorial, Oct 30

Why...“Encyclopedia of cosmetic material trade names”?

First, let it be known that the title, as lengthy and wordy as it is, does not begin to describe the full content and function of this great reference work by the eminent deNavarre.

To be sure, it presents a comprehensive, never-before published, international listing of more than 3000 cosmetic material trade names.

Of equal if not greater importance, the Encyclopedia serves to identify the composition of the particular materials and in many instances also lists specific types of cosmetic items in which they are used . . . plus a complete, cross-indexed classification of the various types of materials . . . plus the complete name and address of the supplier of each material.

Over ten years ago deNavarre saw a real need for such a technical reference book as this. That is why and when he started to compile the necessary material from all over the world. In the interim years, as the number of trade name materials grew, as new sources entered the field, the need for this type of reference volume grew apace. And over these years deNavarre religiously devoted time, effort and care in building, editing, refining and organizing his expanding storehouse of material.

Obviously, this Encyclopedia, because of its definitive content and function, because of its finger-tip reference and cross-reference features, because it does represent the answer to a long felt growing need, will serve its highly selective subscribers not only well but over and over again for years and years to come.

426 pages, 6" x 9", clothbound, shipped postpaid anywhere in the world at \$7.50 per copy. To order copies, write Book Division, American Perfumer & Aromatics, 48 West 38th Street, New York 18, New York, U.S.A.





Rosy character with a green-leaf note

ROSARYL

*A little goes a long way in
creating popular
rose-type compositions*

Full body and mellow rose sweetness are seldom found in commercial aromatics. But in Rosaryl*, a diaryl ether, you get both—plus a pungent green-leaf note of the geranium leaf. In creating many rose types, such character imparts a "natural" fragrance and provides power in small measures.

Rosaryl is compatible with all essential oils and conventional aromatic chemicals. It is stable, too, particularly in soaps and cosmetics with pH above 7. Rosaryl is available at all times, stable in price and quality. For a sample and specification data, write THE DOW CHEMICAL COMPANY, Midland, Michigan. Dept. FC-870E-2.

*Trademark of The Dow Chemical Company

YOU CAN DEPEND ON 



de Laire

Renowned the world over for the finest perfume specialties, aromatic chemicals and fragrance creations for perfumes, soaps and cosmetics.

Over 80 years of experience and outstanding achievements in research and creation at your disposal.

DE LAIRE, INC. 242 WEST 30th STREET, NEW YORK 1, N. Y. • Telephone: CHICKERING 4-7455

